

**SAFETY COMPLIANCE TESTING FOR FMVSS 201U**  
**Occupant Protection In Interior Impact**  
**Upper Interior Head Impact Protection**

**DAIMLERCHRYSLER CORPORATION**  
**2003 Dodge Durango SXT 4-Door SUV**  
**NHTSA No. C30305**

**MGA RESEARCH CORPORATION**  
**446 Executive Drive**  
**Troy, Michigan 48083**



**Test Dates: January 21-22, 2003**  
**Report Date: January 23, 2003**

**FINAL REPORT**

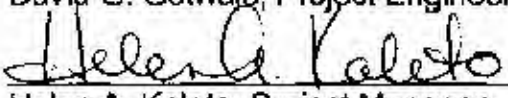
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**OFFICE OF VEHICLE SAFETY COMPLIANCE**  
**400 SEVENTH STREET, SW**  
**ROOM 6111 (NVS-220)**  
**WASHINGTON, D.C. 20590**

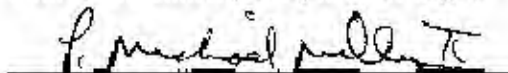
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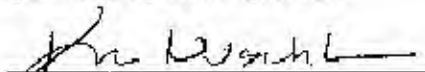


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16. Abstract A compliance test was conducted on the subject 2003 Dodge Durango SXT 4-Door SUV, NHTSA No. C30305, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-201U-01 for the determination of FMVSS 201U compliance. The test was conducted at the MGA Research Corporation in Troy, Michigan on January 21-22, 2003. Test failures identified were as follows:  <p align="center">NONE</p> The data recorded seems to indicate that the 2003 Dodge Durango SXT 4-Door SUV tested appears to comply with the requirements for FMVSS 201U which were set forth by the National Highway Traffic Safety Administration.			
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## **1.0 PURPOSE OF COMPLIANCE TEST**

The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2003 Dodge Durango SXT 4-Door SUV, meets the performance requirements of FMVSS 201U, Occupant Protection in Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted during January 21-22, 2003 on a 2003 Dodge Durango SXT 4-Door SUV, manufactured by DaimlerChrysler Corporation.

All tests were conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-201U-01 dated April 3, 1998 and the corresponding MGA Research Corporation's FMVSS 201U procedure number MGATP201U\_FRAME#2 dated October 18, 2001.

All tests were conducted at MGA Research Corporation in Troy, Michigan and were performed by MGA engineers and technicians. The FMVSS 201U impactor test machine was used to conduct the testing. Target locations were determined by using a Coordinate Measurement Machine in conjunction with the MGA EZ-Target™ program and MGA procedure MGATP201U\_Test Series dated September 20, 2002.

## 2.0 COMPLIANCE TEST DATA SUMMARY

The 2003 Dodge Durango SXT 4-Door SUV was equipped with A, B, C, & D-Pillars, an adjustable seat belt anchorage on each B and C-Pillar, an assist handle on each A-Pillar, a coat hook located on each side rail between the C & D-Pillars, and a front and rear overhead light console. Upon completion of targeting the test vehicle, ten (10) targets were chosen to be impacted based upon engineering judgement and certification test data provided by DaimlerChrysler. Targets were chosen which appeared most likely to give high HIC(d) values. The ten (10) targets chosen were:

AP1	BP1	OP1	UR2
AP2	BP2	SR1	
AP3	BP3	UR1	

The 2003 Dodge Durango SXT 4-Door SUV tested appears to comply with the performance criteria for FMVSS 201U. The HIC(d) measured using the Part 572L (Free Motion Headform) was below 1000 for each tested component.

TABLE 2-1  
SUMMARY TABLE OF TEST RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

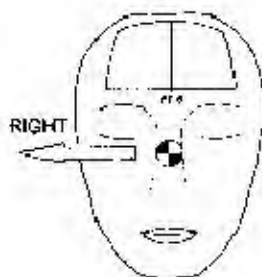
VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	145	45	23.3	699	706	18	25 Right
AP2	Left	202	26	23.8	387	293	12	12 Left
AP3	Right	159	40	23.9	496	437	3	1 Left
BP1	Right	90	25	23.3	595	568	40	2 Left
BP2	Left	270	9	23.7	613	583	4	1 Right
BP3	Right	87	-2	23.8	510	456	14	1 Left
OP1	Right	90	15	23.6	550	509	4	1 Right
SR1	Right	90	28	23.7	423	340	14	4 Left
UR1	Left	270	33	23.9	482	418	37	5 Left
UR2	Left	270	43	23.7	826	875	30	4 Left

Above and left/right refers to the position relative to reference pt. 0 where the target made contact with the Free Motion Headform. See the diagram below for details.



## POST TEST COMMENTS:

The following description lists any post-test damage or other test observations for each target.

AP2 Left: The assist handle was bent during testing.

AP3 Right: The assist handle was bent during testing.

UR1 Left: Headliner deformation.

No damage was observed for any other targets.

## REMARKS:

The targets listed were impacted in the following order:

Right: AP3, AP1, SR1, BP3, BP1, OP1

Left: AP2, UR1, BP2, UR2

The 150 mm rule was observed for targets horizontal to each other and the 200 mm rule was observed for vertical components.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-2  
GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

INTERIOR TRIM INFORMATION: A, B, C, & D-Pillars, an adjustable seat belt anchorage on each B and C-Pillar, an assist handle on each A-Pillar, a coat hook located on each side rail between the C & D-Pillars, and a front and rear overhead light console.

SUNROOF INFORMATION:

Installed:      Yes   X   No  
Operation:      Electric      Manual

ROLL-BAR INFORMATION:

Installed:      Yes   X   No  
Padded:      Yes   X   No  
Braces:      Yes   X   No

GENERAL INFORMATION:

Date Received: 1/14/03; Odometer Reading: 12 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: DaimlerChrysler Corporation

Date of Manufacture: October, 2002; VIN: 1D4HR38N33F527190

GVWR: 2745 kg;

GAWR FRONT: 1361 kg

GAWR REAR: 1727 kg

## DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 241 kpa      REAR: 241 kpaRecommended Tire Size: P245/70R16

Recommended Cold Tire Pressure:

FRONT: 241 kpa      REAR: 241 kpaSize of Tire on Test Vehicle: P255/65R16Type of Spare Tire: P255/65R16;      Space Saver:     ; Standard: X

## VEHICLE CAPACITY DATA:

Type of Front Seats:      Bench     ;      Bucket X;      Split Bench     Number of Occupants:      Front 2;      Rear 3;      TOTAL 5VEHICLE CAPACITY WEIGHT (VCW) = 476 kgNo. of Occupants x 68 kg = 340 kgRated Cargo/Luggage Weight (RCLW) = 136 kg (difference)

## WEIGHT OF TEST VEHICLE AS DELIVERED AT LABORATORY: (with maximum fluids)

Right Front = 536.0 kg      Right Rear = 402.0 kgLeft Front = 520.0 kg      Left Rear = 440.5 kgTOTAL FRONT = 1056.0 kg      TOTAL REAR = 842.5 kg% Total Weight = 55.6 %      % Total Weight = 44.4 %TOTAL DELIVERED WEIGHT = 1898.5 kg

## CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 1898.5 kgRated Cargo/Luggage Wt. = 136 kgTARGET TEST WEIGHT 2034.5 kg

## WEIGHT OF TEST VEHICLE:

Right Front =	<u>538.0</u> kg	Right Rear =	<u>467.0</u> kg
Left Front =	<u>520.0</u> kg	Left Rear =	<u>509.5</u> kg
TOTAL FRONT =	<u>1058.0</u> kg	TOTAL REAR =	<u>976.5</u> kg
% Total Weight =	<u>52.0</u> %	% Total Weight =	<u>48.0</u> %
TOTAL TEST WEIGHT = <u>2034.5</u> kg			
Weight of ballast secured in vehicle's cargo area = <u>136.0</u> kg			

## TEST VEHICLE ATTITUDE:

AS DELIVERED:    Right Front 847 mm;      Left Front 851 mm;  
                              Right Rear 876 mm;      Left Rear 877 mm;

Pitch Angle at Right Door Sill = 1.1° rear higher  
 Pitch Angle at Left Door Sill = 1.1° rear higher  
 Roll Angle at Front Bumper = 0.1° right higher  
 Roll Angle at Rear Bumper = 0.1° right higher

FULLY LOADED:    Right Front 849 mm;      Left Front 853 mm;  
                              Right Rear 865 mm;      Left Rear 863 mm;

Pitch Angle at Right Door Sill = 0.9° rear higher  
 Pitch Angle at Left Door Sill = 0.9° rear higher  
 Roll Angle at Front Bumper = 0.0°  
 Roll Angle at Rear Bumper = 0.1° right higher

## AS TARGETED:

Pitch Angle at Right Door Sill = 0.9° rear higher  
 Pitch Angle at Left Door Sill = 0.9° rear higher  
 Roll Angle at Front Bumper = 0.0°  
 Roll Angle at Rear Bumper = 0.1° right higher



## AS TESTED (Targets Impacted on Right Side):

Pitch Angle at Right Door Sill = 0.9° rear higher  
Pitch Angle at Left Door Sill = 0.9° rear higher  
Roll Angle at Front Bumper = 0.0°  
Roll Angle at Rear Bumper = 0.1° right higher

## AS TESTED (Targets Impacted on Left Side):

Pitch Angle at Right Door Sill = 0.9° rear higher  
Pitch Angle at Left Door Sill = 0.9° rear higher  
Roll Angle at Front Bumper = 0.0°  
Roll Angle at Rear Bumper = 0.1° right higher

VEHICLE WHEELBASE = 2880 mm

REMARKS: The seat travel distance was measured to be 220 mm for the driver front seat and 180 mm for the passenger front seat.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-3  
HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

	HORIZONTAL ANGLE SPECIFIED RANGE	MINIMUM HORIZONTAL ANGLE	MAXIMUM HORIZONTAL ANGLE
A-PILLAR	L 195°-255°	L 201.7°	L 248.3°
	R 105°-165°	R 113.5°	R 159.0°
B-PILLAR	L 195°-345°	L 197.2°	L 275.9°
	R 15°-165°	R 86.5°	R 162.4

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaleta

TABLE 2-4

## VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXTVEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite MetallicVEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003TEST LABORATORY: MGA Research CorporationOBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

## VERTICAL IMPACT ANGLE RANGES

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
FRONT HEADER	FH1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	FH2	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
SIDE RAIL	SR1	L 0°-50°	L 0°	L 28°
		R 0°-50°	R 0°	R 28°
	SR2A	L 0°-50°	L 0°	L 26°
		R 0°-50°	R 0°	R 26°
	SR2B	L 0°-50°	L 0°	L 24°
		R 0°-50°	R 0°	R 24°
	SR3A	L 0°-50°	L 0°	L 22°
		R 0°-50°	R 0°	R 21°
	SR3B	L 0°-50°	L 0°	L 36°
		R 0°-50°	R 0°	R 36°
A-PILLAR	AP1	L -5°-50°	L -5°	L 45°
		R -5°-50°	R -5°	R 45°
	AP2	L -5°-50°	L -5°	L 26°
		R -5°-50°	R -5°	R 23°
	AP3	L -5°-50°	L -5°	L 40°
		R -5°-50°	R -5°	R 40°

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
-PILLAR	BP1	L    -10°-50°	L    -10°	L    25°
		R    -10°-50°	R    -10°	R    25°
	BP2*	L    0°-50°	L    0°	L    9°
		R    0°-50°	R    0°	R    9°
	BP3	L    -10°-50°	L    -10°	L    -2°
		R    -10°-50°	R    -10°	R    -2°
	BP4	L    -10°-50°	L    -10°	L    -6°
		R    -10°-50°	R    -10°	R    -6°
OTHER PILLAR	OP1*	L    0°-50°	L    0°	L    15°
		R    0°-50°	R    0°	R    15°
	OP2	L    -10°-50°	L    -10°	L    -2°
		R    -10°-50°	R    -10°	R    -2°
UPPER ROOF 1		0°-50°	0°	33°
UPPER ROOF 2		0°-50°	0°	43°
UPPER ROOF 3		0°-50°	0°	27°
UPPER ROOF 4		0°-50°	0°	32°
UPPER ROOF 5		0°-50°	0°	44°
UPPER ROOF 6		0°-50°	0°	28°

As determined using the Procedures specified in S8.13.4.2. Targets BP2\* and OP1\* are seat belt anchor points.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-5  
TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	220 mm	180 mm
T°	Horizontal ∠ {CG-F1 (Left Seat) to (Right A-Pillar)}	111.7°	--
A1°	360° - T°	248.3°	--
W°	Horizontal ∠ {CG-2 (Left Seat) to (Left A-Pillar)}	201.7°	--
A2°	A2° = W°	201.7°	--
U°	Horizontal ∠ {CG-2 (Left Seat) to (Left B-Pillar)}	275.9°	--
B1°	B1° = U°	275.9°	--
V°	Horizontal ∠ {CG-R (Left Seat) to (Left B-Pillar)}	197.2°	--
B2°	B2° = V°	197.2°	--
W° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right A-Pillar)}	--	159.0°
A1° (right)	A1° (right) = W° (right)	--	159.0°
T° (right)	Horizontal ∠ {CG-F1 (Right Seat) to (Left A-Pillar)}	--	246.5°
A2° (right)	360° - T° (right)	--	113.5°
V° (right)	Horizontal ∠ {CG-R (Right Seat) to (Right B-Pillar)}	--	162.4°
B1° (right)	B1° (right) = V° (right)	--	162.4°
U° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right B-Pillar)}	--	86.5°
B2° (right)	B2° (right) = U° (right)	--	86.5°
J	A-Pillar {(Plane 3) - (Plane 5)}	326.8 mm	335.4 mm
J/2	J ÷ 2	163.4 mm	167.7 mm
D1	Upper Roof {(Plane A) - (Plane B)}	2485.0 mm	
D1/2	D1 ÷ 2	1242.5 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1194.0 mm	

Measurement	Description	Left Side	Right Side
D2/2	D2 + 2	597.0 mm	
.35D1	.35 x D1	869.8 mm	
.35D2	.35 x D2	417.9 mm	
N	B-Pillar ((BPR) - (lowest point on daylight opening forward of B-Pillar))	433.4 mm	433.5 mm
N/2	B-Pillar ((BP3) - (lowest point on daylight opening forward of B-Pillar))	216.7 mm	216.8 mm
N/4	B-Pillar ((BP4) - (lowest point on daylight opening forward of B-Pillar))	108.4 mm	108.4 mm
Q	O-Pillar ((OPR) - (lowest point on daylight opening))	450.7 mm	456.1 mm
Q/2	Q + 2	225.4 mm	228.1 mm
D	R-Pilar (Point 7 - Point M)	980.0 mm	980.0 mm
3D/7	3D / 7	420.0 mm	420.0 mm

As determined using the Procedures specified in S10.1-10.13.

SgRP Locations (vehicle coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2086.0	-370.0	797.0	2086.0	370.0	797.0
Rear Row	2901.0	-370.0	834.0	2901.0	370.0	834.0



SgRP Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2085.8	-369.8	796.6	2086.5	370.1	796.8
Rear Row	2900.7	-369.9	833.1	2901.4	370.0	833.3

CG Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
CGF1	2025.8	-369.8	1456.6	2066.5	370.1	1456.8
CGF2	2245.8	-369.8	1456.6	2246.5	370.1	1456.8
CGR	3060.7	-369.9	1493.1	3061.4	370.0	1493.3

REFERENCE FOR VEHICLE COORDINATE SYSTEM:

Driver door striker attachment, upper hold (x, y, z) = (2251, -786, 836)

REMARKS:

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaleta

TABLE 2-6

## SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXTVEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite MetallicVEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003TEST LABORATORY: MGA Research CorporationOBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
A-Pillar Left Side								
AP1	1783.5	-529.0	1533.6			Yes		
REL	1784.3	-543.4	1510.6	216	45		1	No
AP2	1660.0	-589.6	1444.8			Yes		
REL	1646.9	-588.5	1425.0	202	26		1	Yes
AP3	1582.4	-594.9	1369.4	202	40	No		No
A-Pillar Right Side								
AP1	1782.6	527.2	1532.2			Yes		
REL	1773.6	539.9	1510.7	145	45		1	Yes
AP2	1655.7	589.1	1444.6			Yes		
REL	1640.5	584.8	1423.2	159	23		1	No
AP3	1578.9	593.0	1364.0	159	40	No		Yes
B-Pillar Left Side								
BP1	2306.5	-465.1	1592.3	270	25	No		No
BP2	2297.9	-568.9	1368.3	270	9	No		Yes
BP3	2263.5	-617.0	1376.4			Yes		
REL	2250.0	-623.0	1360.4	276	-2		1	No
BP4	2352.3	-665.0	1268.8	215	-6	No		No
B-Pillar Right Side								
BP1	2303.2	469.6	1591.6	90	25	No		Yes



SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
BP2	2289.3	573.5	1365.8	90	9	No		No
BP3	2261.6	617.6	1375.8			Yes		
REL	2244.5	625.6	1358.1	87	-2		1	Yes
BP4	2347.8	670.0	1267.8	145	-6	No		No
Other Pillar Left Side								
OPR	3199.0	-448.5	1622.6					
OP1	3252.1	-591.6	1366.7	270	15	No		No
OP2	3273.3	-633.3	1397.3			Yes		
REL	3294.7	-632.8	1386.3	270	-2		1	No
Other Pillar Right Side								
OPR	3194.5	456.2	1627.7					
OP1	3242.0	603.7	1371.8	90	15	No		Yes
OP2	3268.0	636.6	1400.2			Yes		
REL	3292.5	635.5	1393.3	90	-2		1	No
Rear Pillar Right Side								
RP1	3901.7	501.9	1597.3					No
RP2	4011.4	633.0	1447.4					No
Front Header Left Side								
FH1	1699.4	-408.6	1539.3	180	50	No		No
FH2	1684.9	-258.0	1551.6	180	50	No		No
Front Header Right Side								
FH1	1695.3	407.7	1542.3	180	50	No		No
FH2	1680.2	256.7	1553.9	180	50	No		No
Side Rail Left Side								
SR1	1934.4	-476.7	1577.4	270	28	No		No
SR2(A)	2084.5	-468.9	1591.9	270	26	No		No
SR2(B)	2007.1	-470.8	1588.3	270	24	No		No
SR3A	2456.7	-465.7	1614.5	270	22	No		No
SR3B	3348.6	-481.1	1590.0	270	36	No		No

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
Side Rail Right Side								
SR1	1932.4	474.3	1577.1	90	28	No		Yes
SR2(A)	2083.5	465.9	1594.1	90	26	No		No
SR2(B)	2004.0	470.2	1585.9	90	24	No		No
SR3A	2454.0	467.8	1615.1	90	21	No		No
SR3B	3344.5	483.1	1600.4	90	36	No		No
Upper Roof Left Side								
UR1	1999.2	-411.5	1626.7	270	33	No		Yes
UR2	2302.0	-419.2	1605.5	270	43	No		Yes
UR3	3199.3	-415.8	1648.1	270	27	No		No
Upper Roof Right Side								
UR4	2004.2	413.3	1623.9	90	32	No		No
UR5	2306.2	416.2	1606.5	90	44	No		No
UR6	3189.6	414.8	1654.7	90	28	No		No

As determined using the Procedures specified in S10.1-10.13.

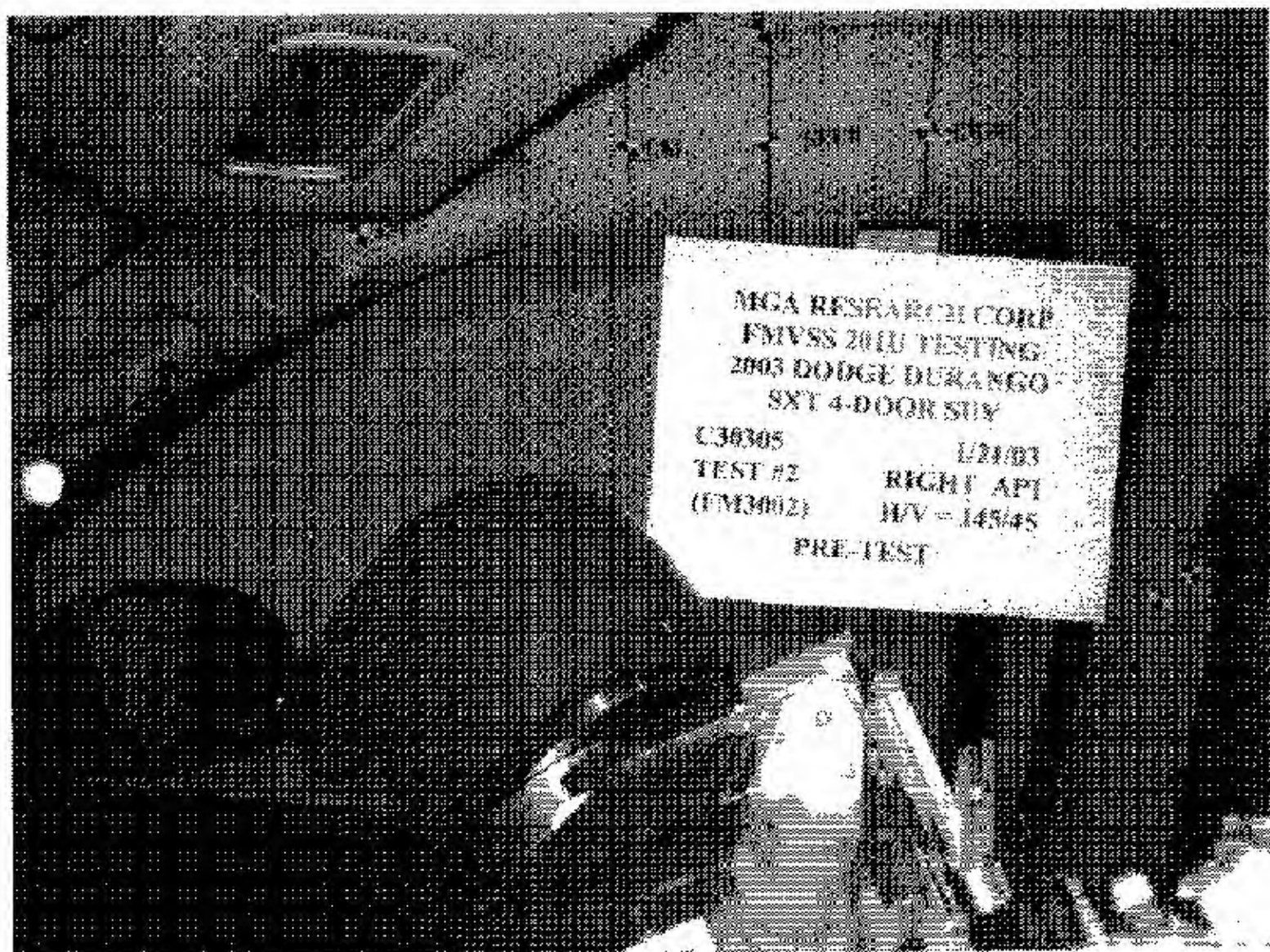
REMARKS: The horizontal and vertical approach angles listed in this table are the impact angles judged by the test engineer most likely to give high HIC(d) values.

Targets RP1, RP2, and RH (left and right side) were found to be located greater than 600 mm rearward of the rearmost seating reference point (SgRP). These targets are therefore exempt from testing.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaletc





MGA RESEARCH CORP  
FMVSS 201C TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305 1/21/03

TEST #2 RIGHT API

(FMV3002) H/V = 145/45

POST-TEST

MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/21/03

TEST #2

RIGHT API

(FM3002)

H/V = 145/45

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES MGATP201U\_FRAME #2.3

DOC. NO.: MGATP201U\_FRAME #2  
REVISION NO.: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C3305 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durango

#### GENERAL TEST PARAMETERS:

Test Number: 2

Target (Vehicle Side): left API

Temperature: 72 °C

MGA Test Reference No: FM3002

Humidity: 72 %

Approach Angles: Horizontal 145 °

Time of Test: 12:18 am pm

Vertical 45 °

FMH Serial No: 36

#### TEST RESULTS:

HIC(d)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left <u>Right</u> Pt. O
699	706	7.5	23.3	18	25

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
Y	5	J35923	-93.1	1.21	1.21
Y	6	J35916	95.3	1.23	1.23
Z	7	J35919	95.1	1.51	1.51

REMARKS (Summary of test damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By\*: [Signature] Date: 1/2/02

\*Only necessary for NHTSA (Government) Compliance testing.

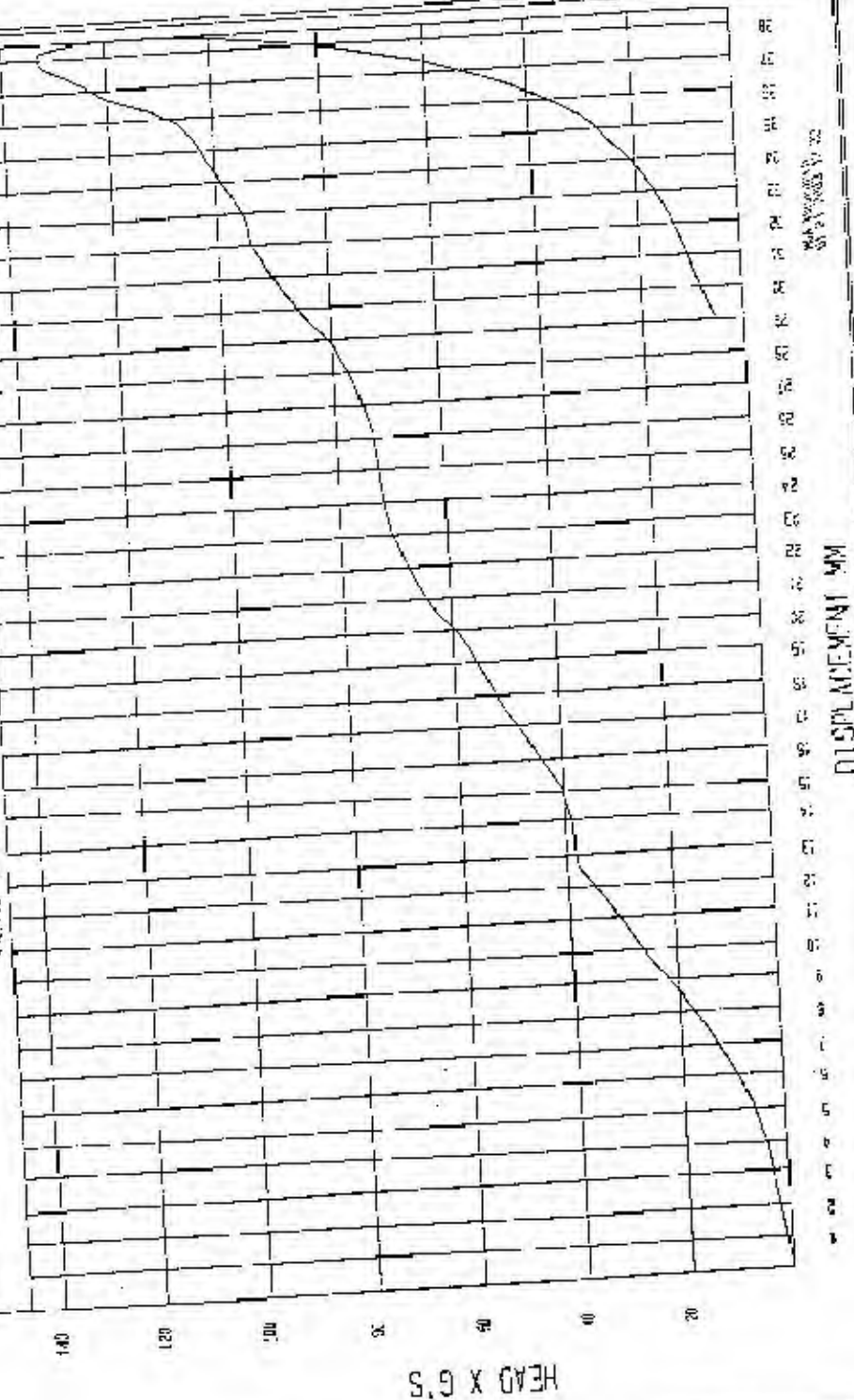
```
*****
RESULTS OF HIC36 PROGRAM
*****
# input file is \NHTSA\FM3002AV.A05
The HIC = 706.38 calculated over 7.5 msec
T1 = 3.19 msec T2 = 10.66 msec
*****
HIC(d) = 639
Impact Velocity = 23.3 (kph)
```



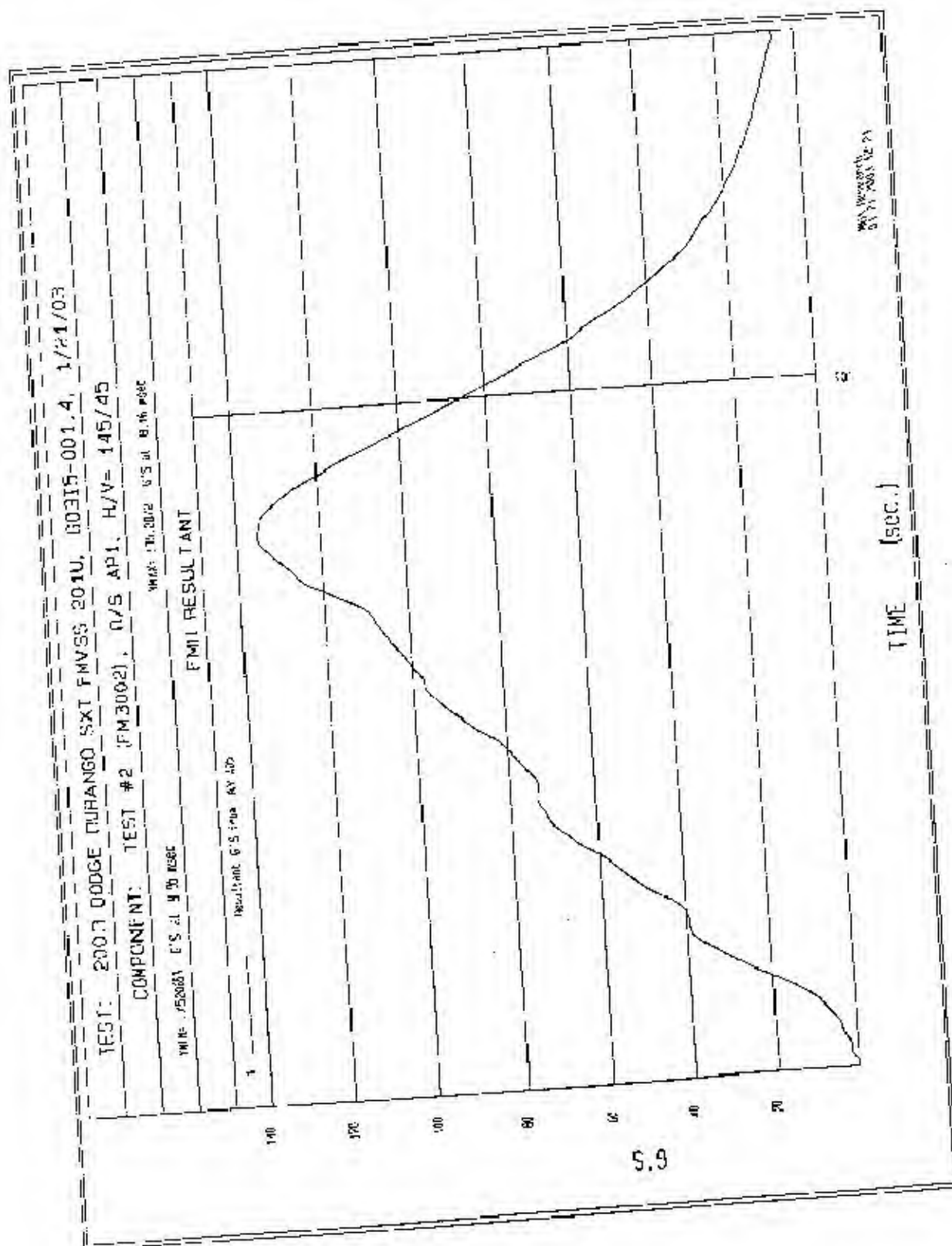
TEST: 2003 DODGE DURANGO SXT FVSS 201U, 60315-001.4, 1/21/03

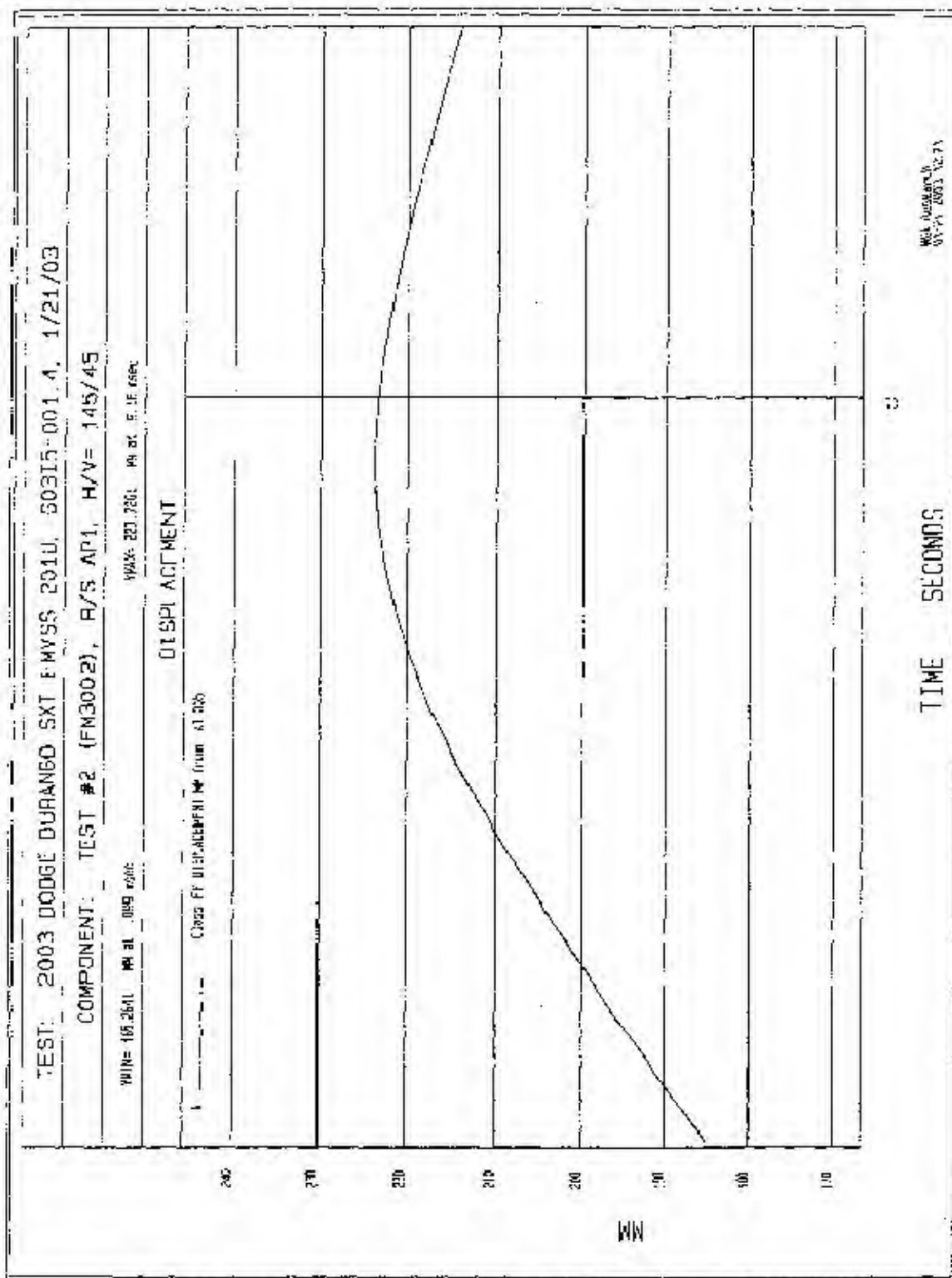
COMPONENT: TEST #2 (FM3002), R/S A11, H/V- 145/45

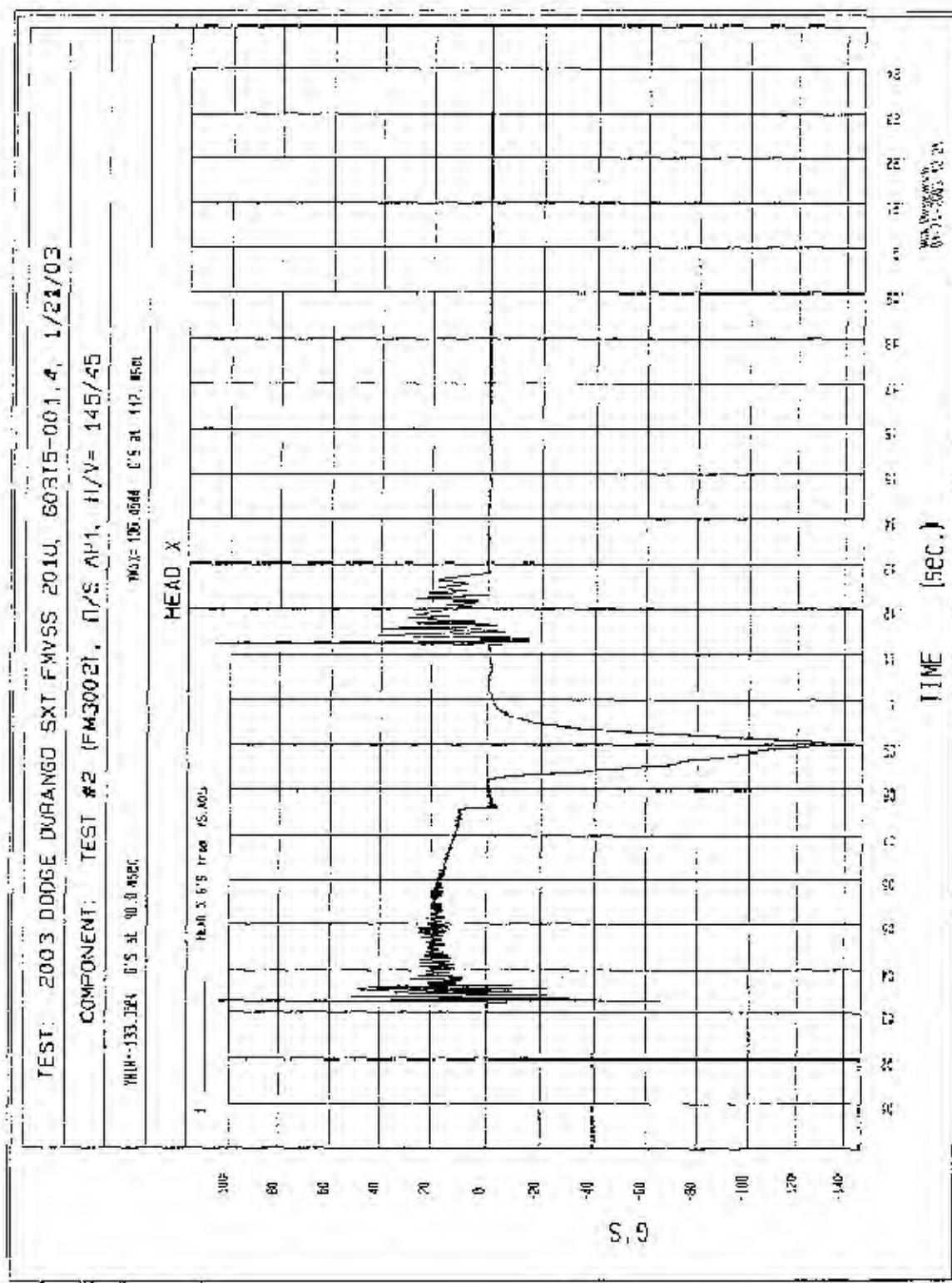
HEAD X as a function of DISPLACEMENT

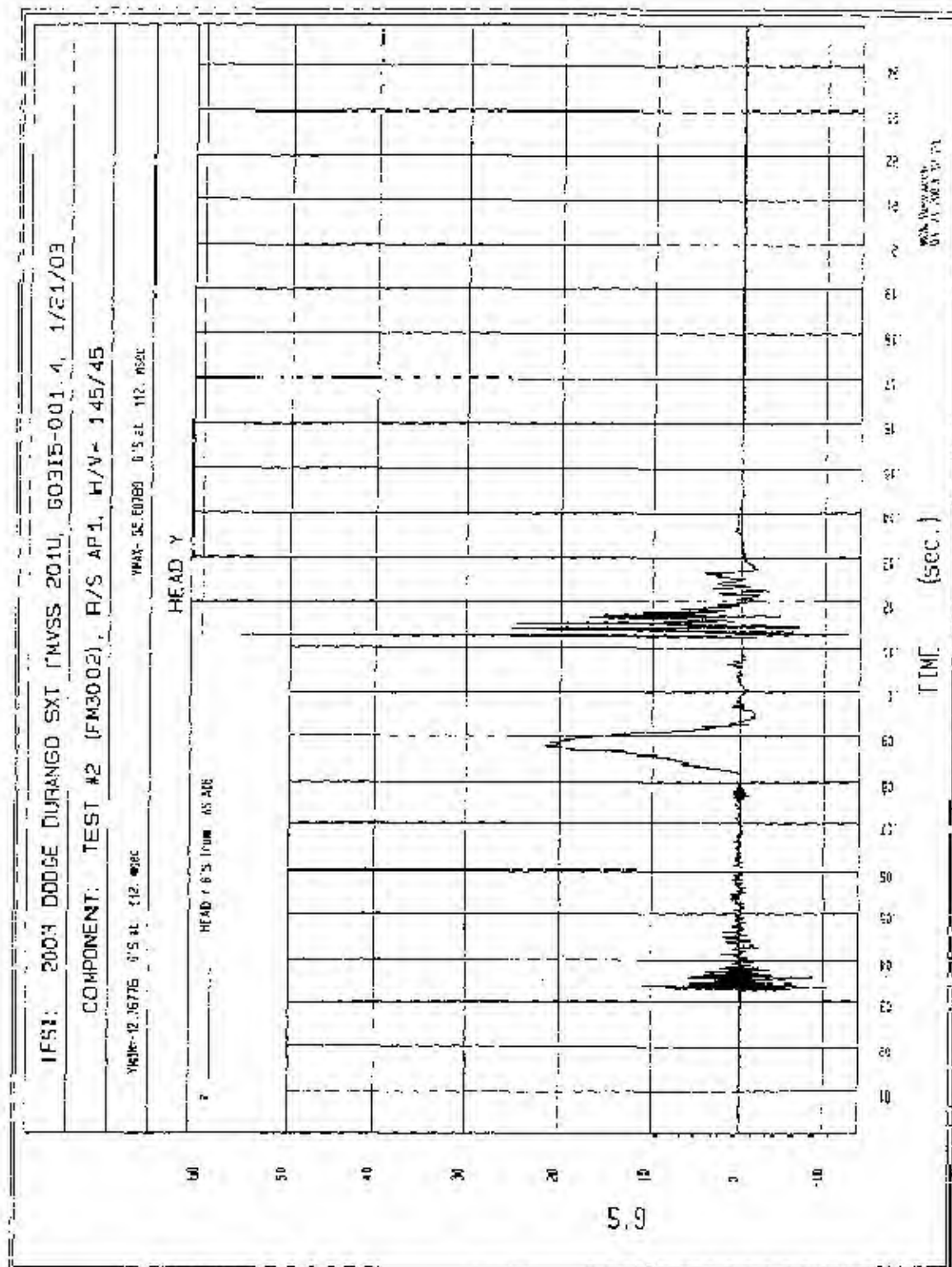


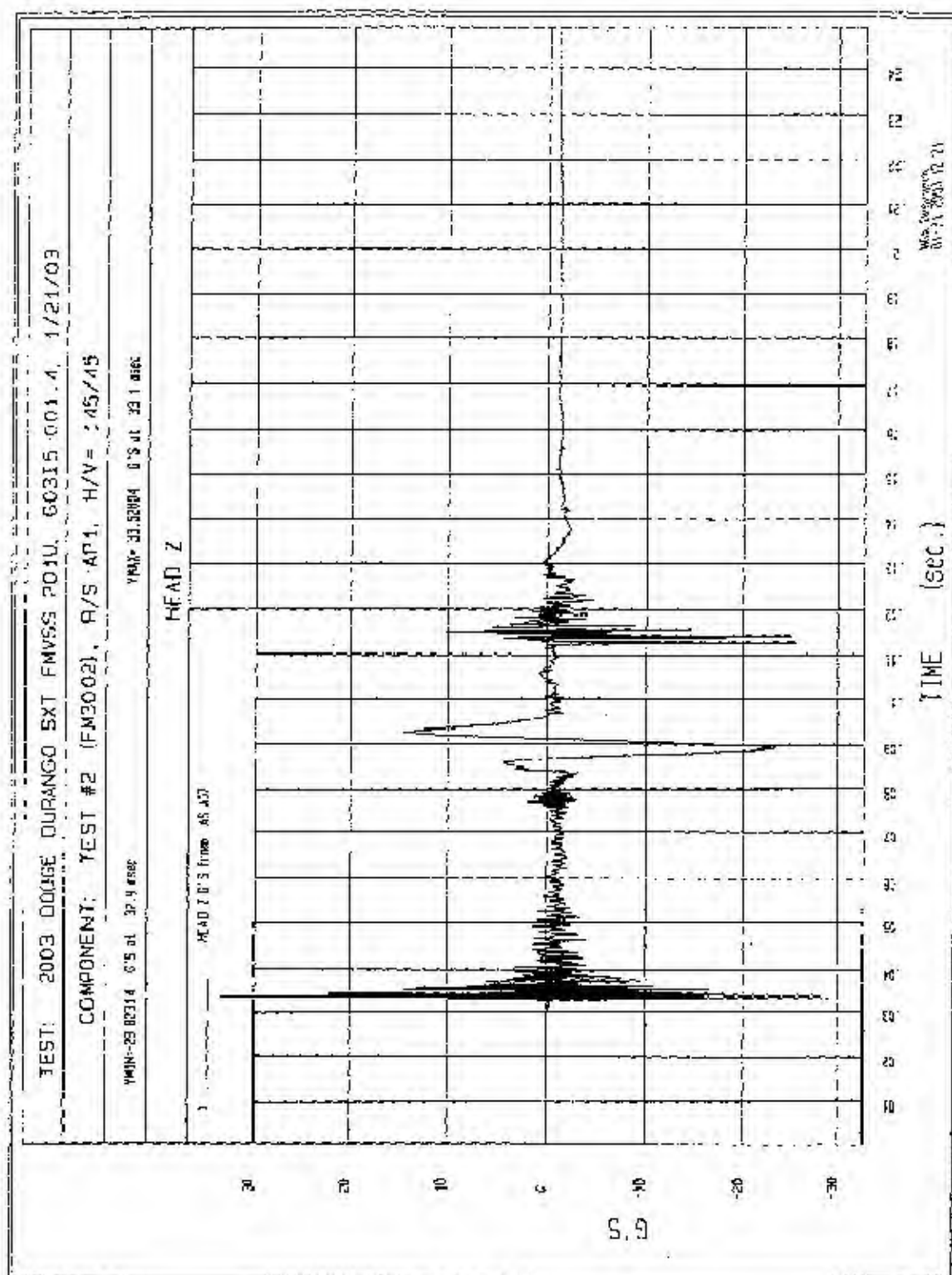












TEST: 2003 DODGE DURANGO SX1 FMVGS 201U, G0315-CC1.4, 1/21/03

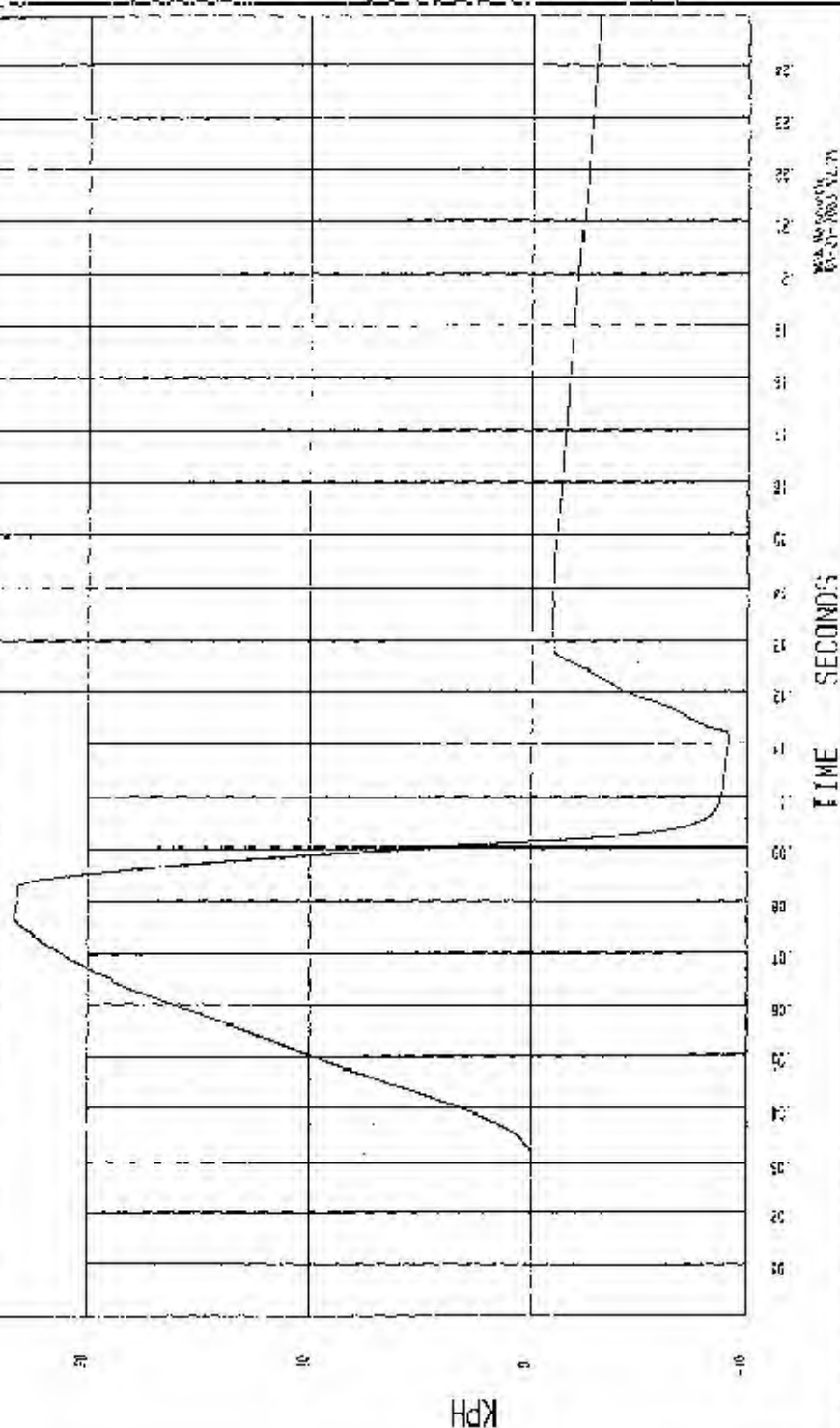
COMPONENT: TEST #2 (FM3000?), R/S AP1, II/V= 145/45

TIME=9 10567 KPH at 111. sec

TIME= 23.4093 KPH at 76.6 sec

# VELOCITY

Class F VELOCITY KPH (due to 1.05)





MG A RESEARCH CORP  
EMVSS 2010 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30805 1/22/03  
TEST #7 LEFT AP2  
(DNL007) H/V - 202/26

MGA RESEARCH CORP  
FMVSS 2010 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30308

1/22/03

TEST #7

LEFT AP2

(FMI007)

H/V = 202/26

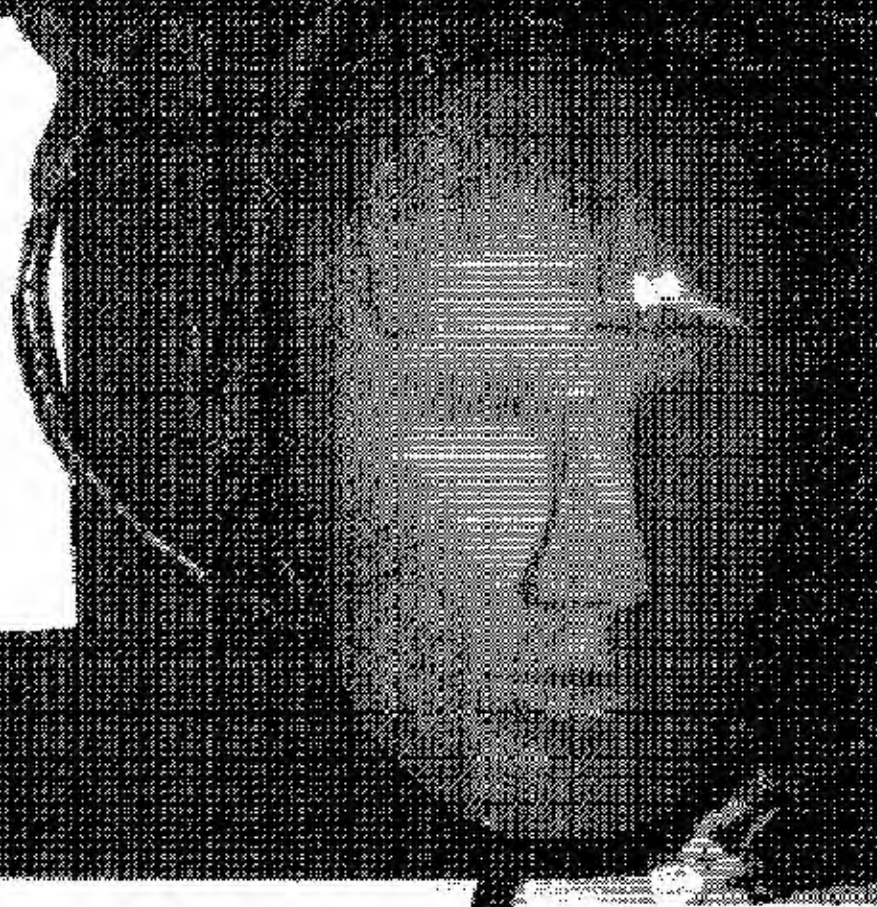
POST-TEST



MGA RESEARCH CORP  
FMVSS 2011 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SIA

30305 12203  
TEST #7 LEFT APZ  
(FM3007) ILV = 202/26

POST-TEST



MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES: MGA1P201U\_FRAME #3.3

DOC NO.: MGA1P201U\_FRAME #3  
REVISION NO.: 4  
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### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C3026 VEHICLE YR/MAKE/MODEL: 2003 CORLE RUMCO

#### GENERAL TEST PARAMETERS:

Test Number: 7

Target (Vehicle Side): Left AP2

Temperature: 22 °C

MGA Test Reference No.: FM3007

Humidity: 22 %

Approach Angles: Horizontal 202 °

Time of Test: 9:47 am

Vertical 26 °

FMH Serial No: 35

#### TEST RESULTS:

HIC(c)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
387	293	10.4	23.8	12	12

#### INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
X	5	J35924	93.1	1.21	1.21
Y	6	J35919	95.3	1.23	1.23
Z	7	J35051	95.1	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

THE CRAB HANDLE WAS BENT DURING TESTING

Recorded By: [Signature] Approved By\*: [Signature] Date: 1/22/03

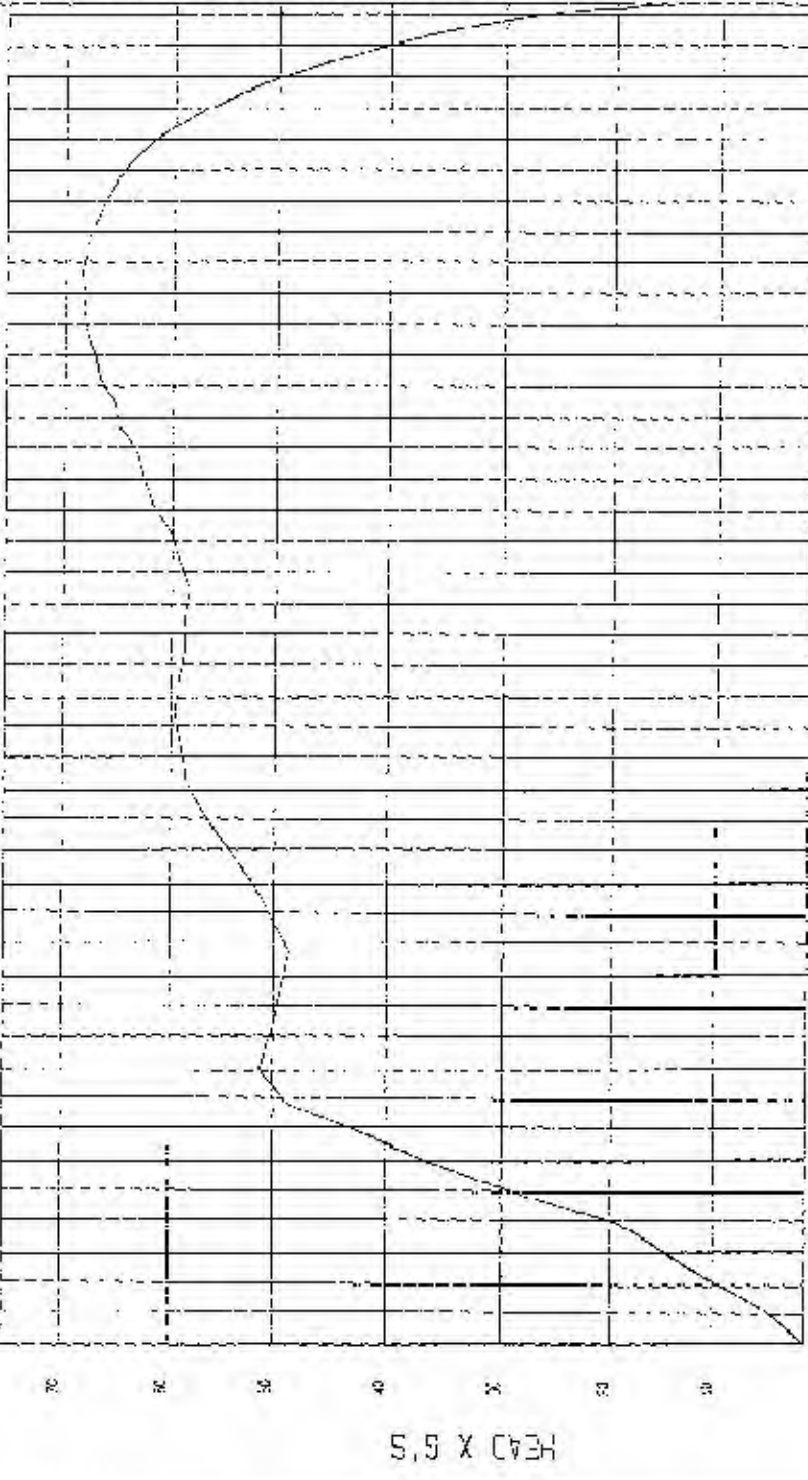
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3007AV.A05
HIC = 292.95 calculated over 10.4 msec
T1 = .90 msec T2 = 11.25 msec
*****
HIC(Δ) = 387
Impact Velocity = 23.8 (kph)
```

TEST: 2003 DUDGE DURAND SX: FMVSS 2010, 60315-001.4, 1/22/03

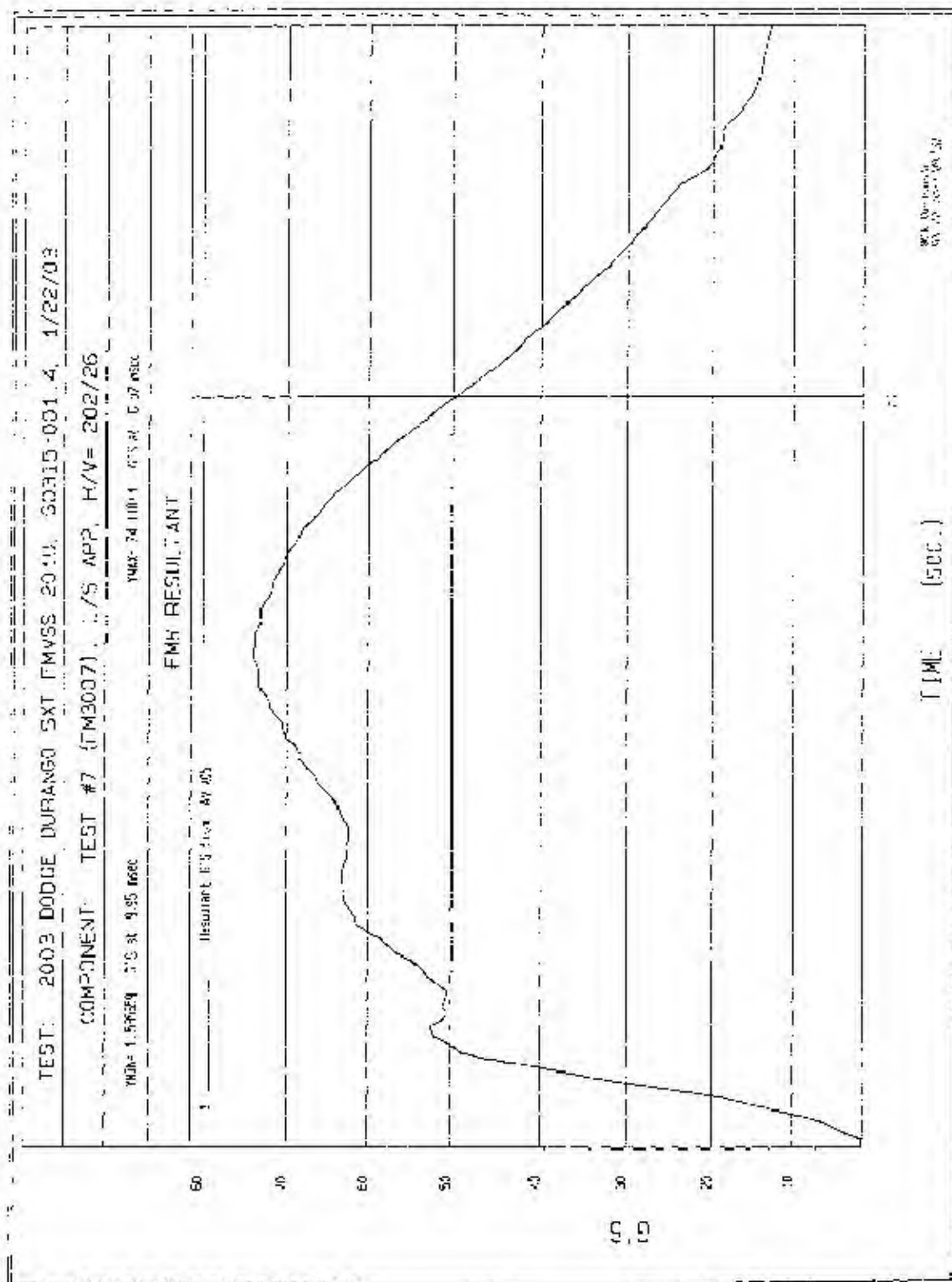
COMPONENT: TEST #7 (FM3007), L/S APP, I/V= 202/PE

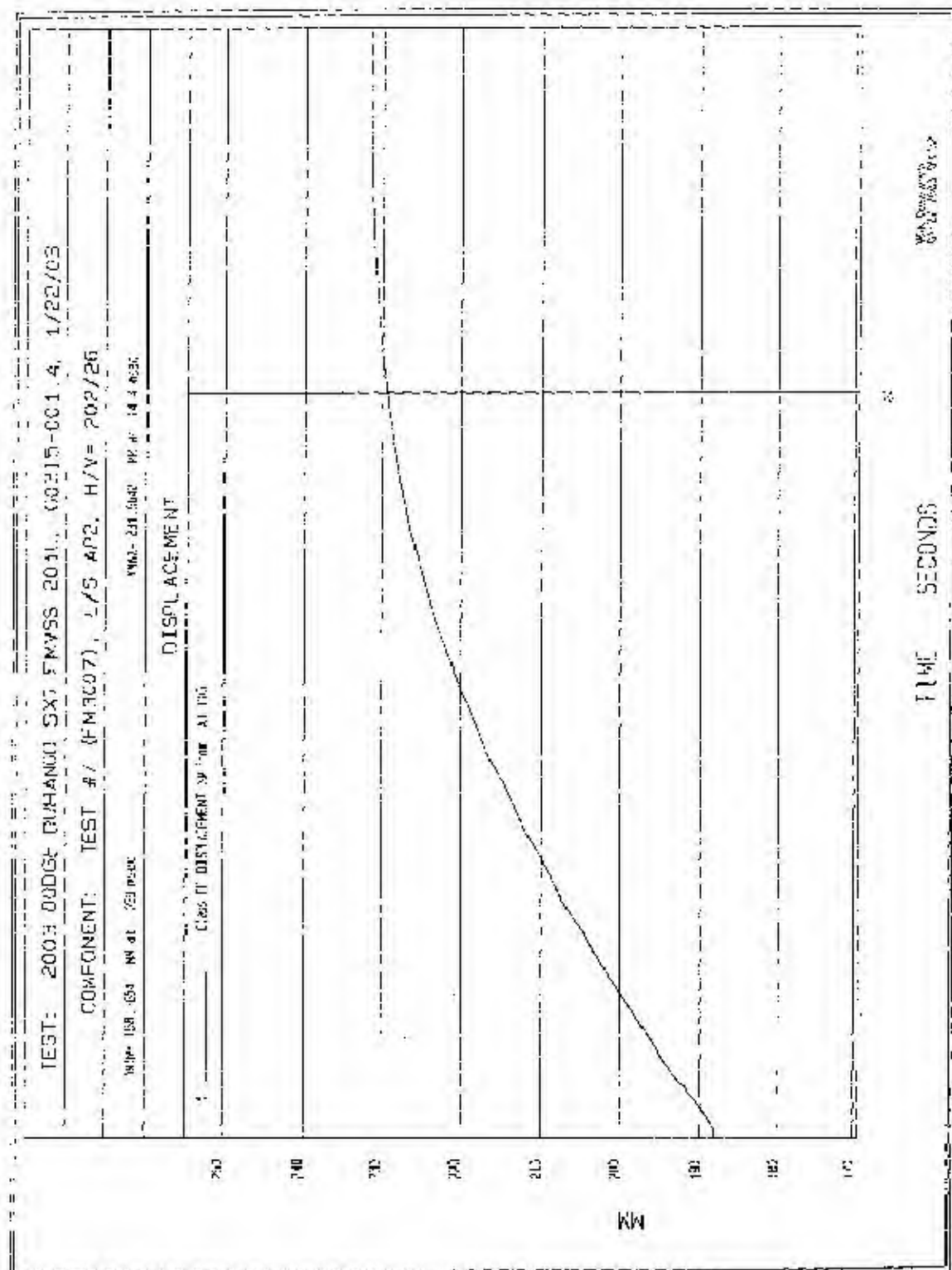
HEAD X AS A FUNCTION OF DISPLACEMENT



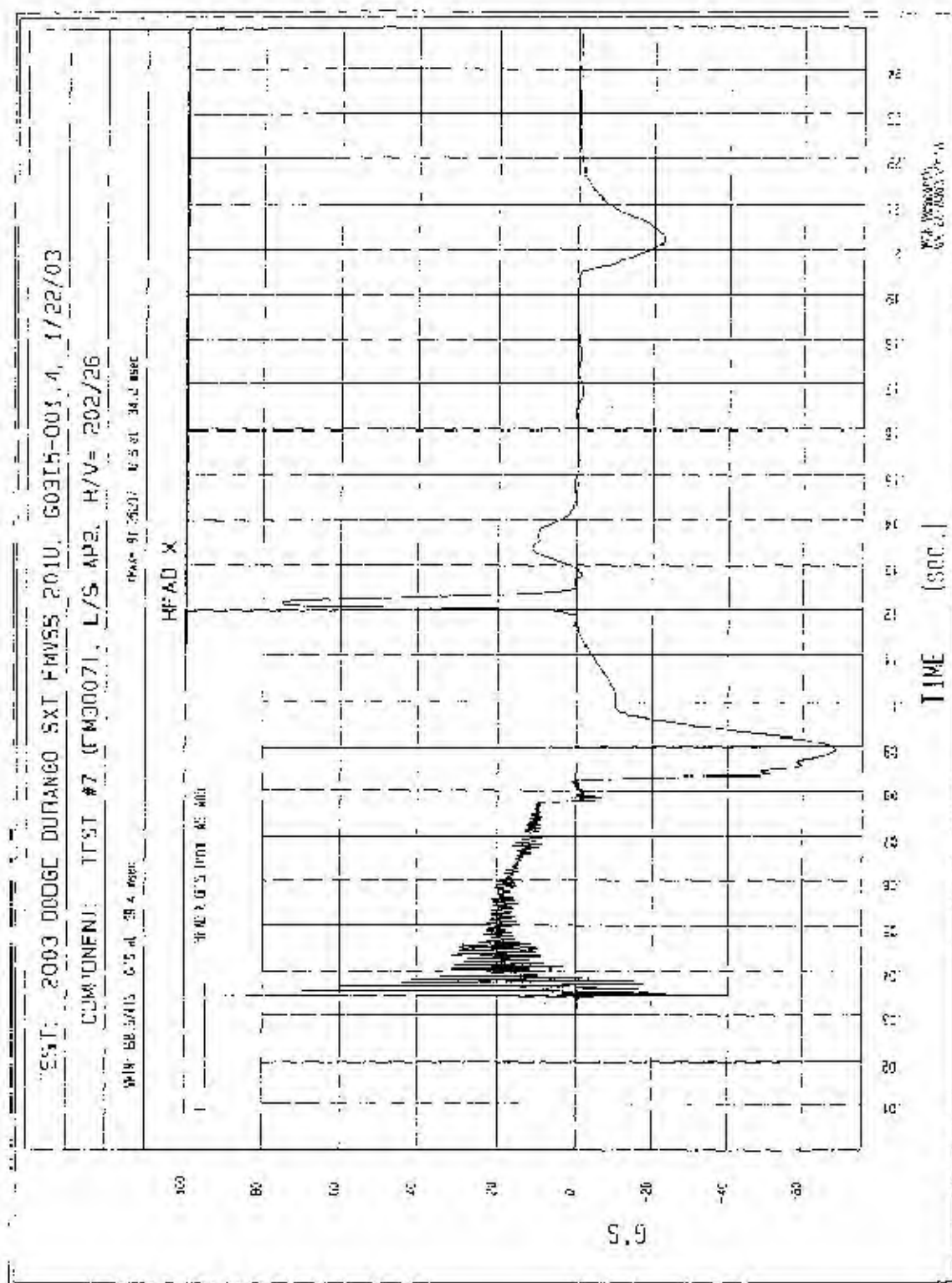
DISPLACEMENT MM

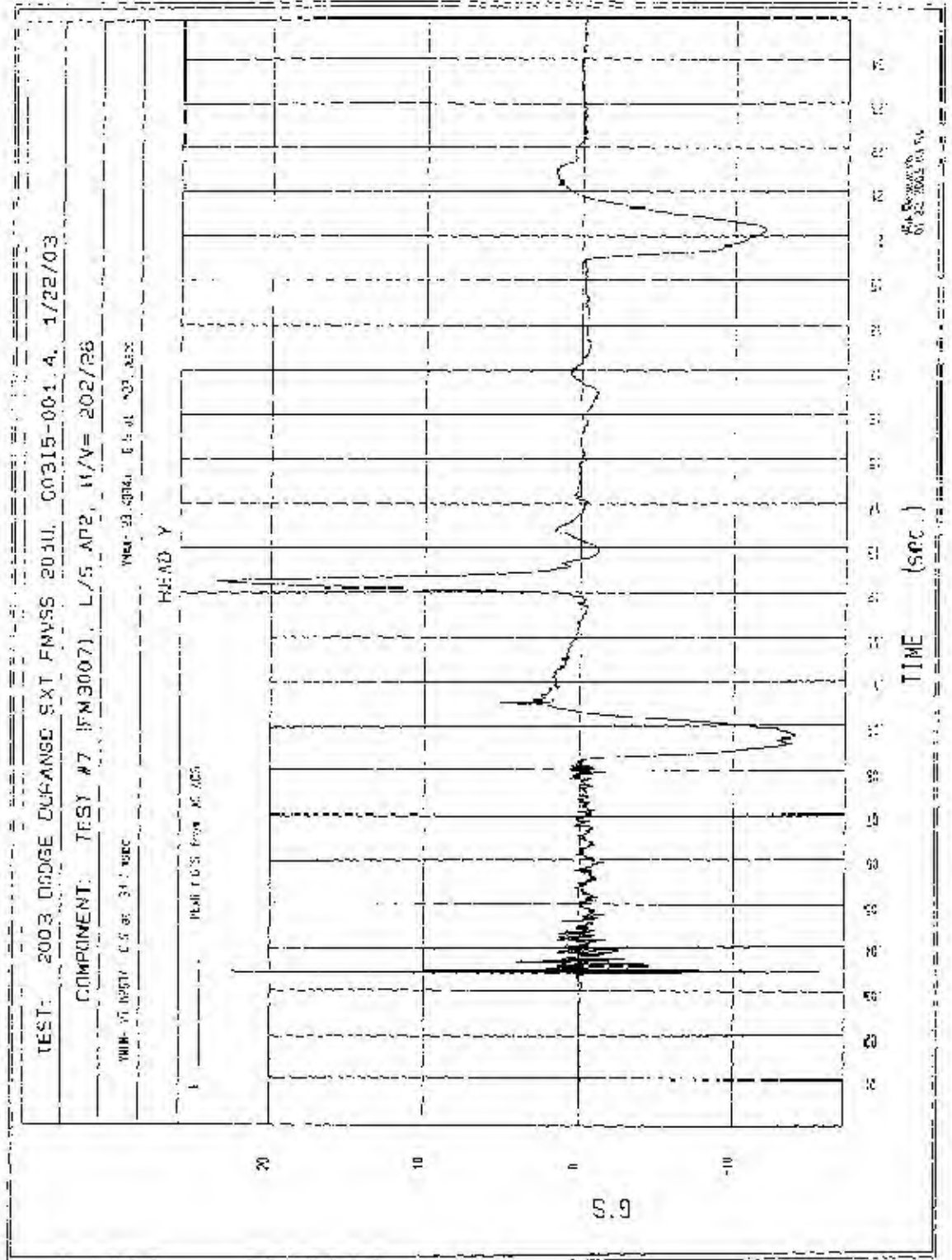
WAVEFORM  
OF X 1001.0



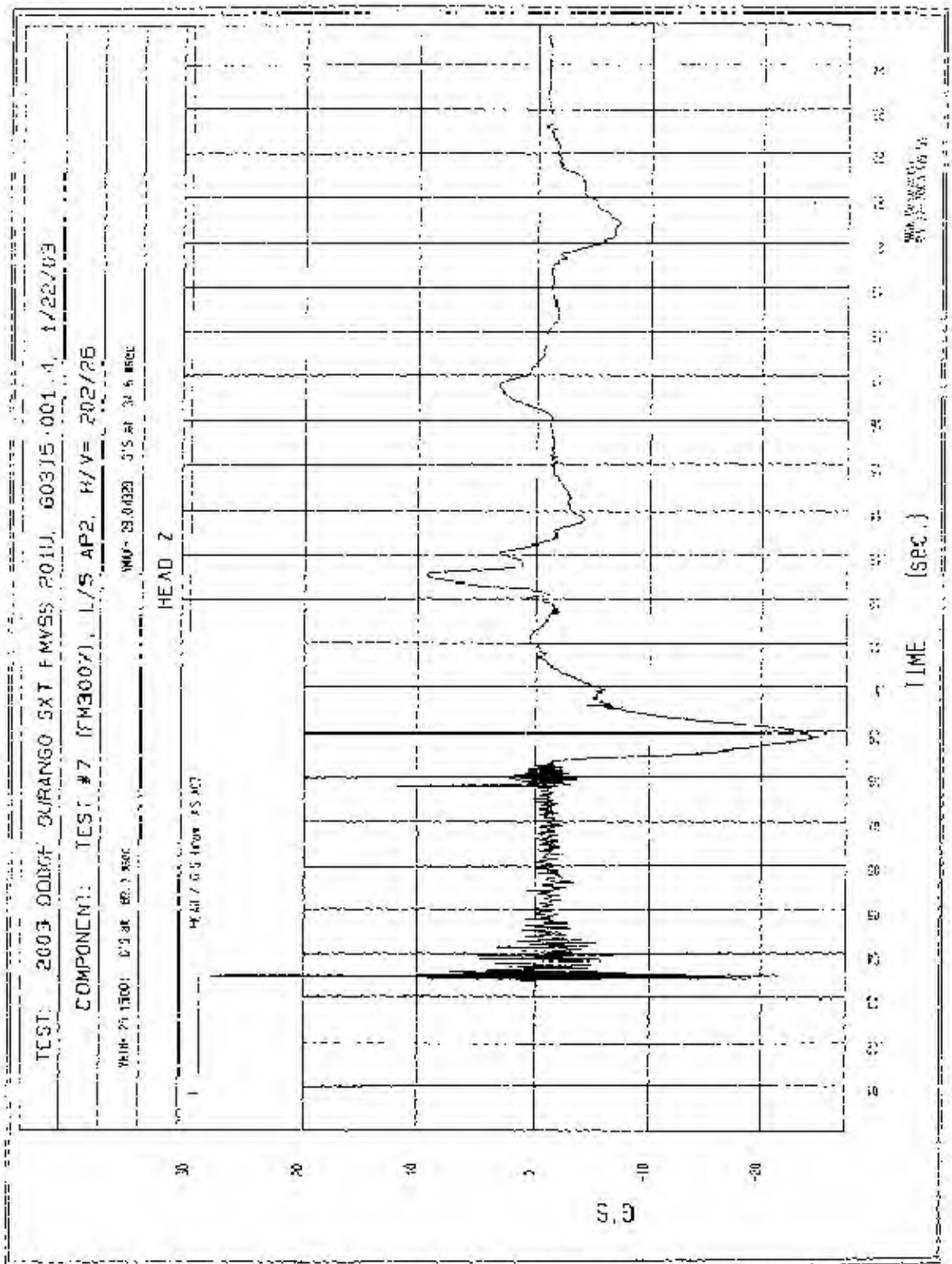


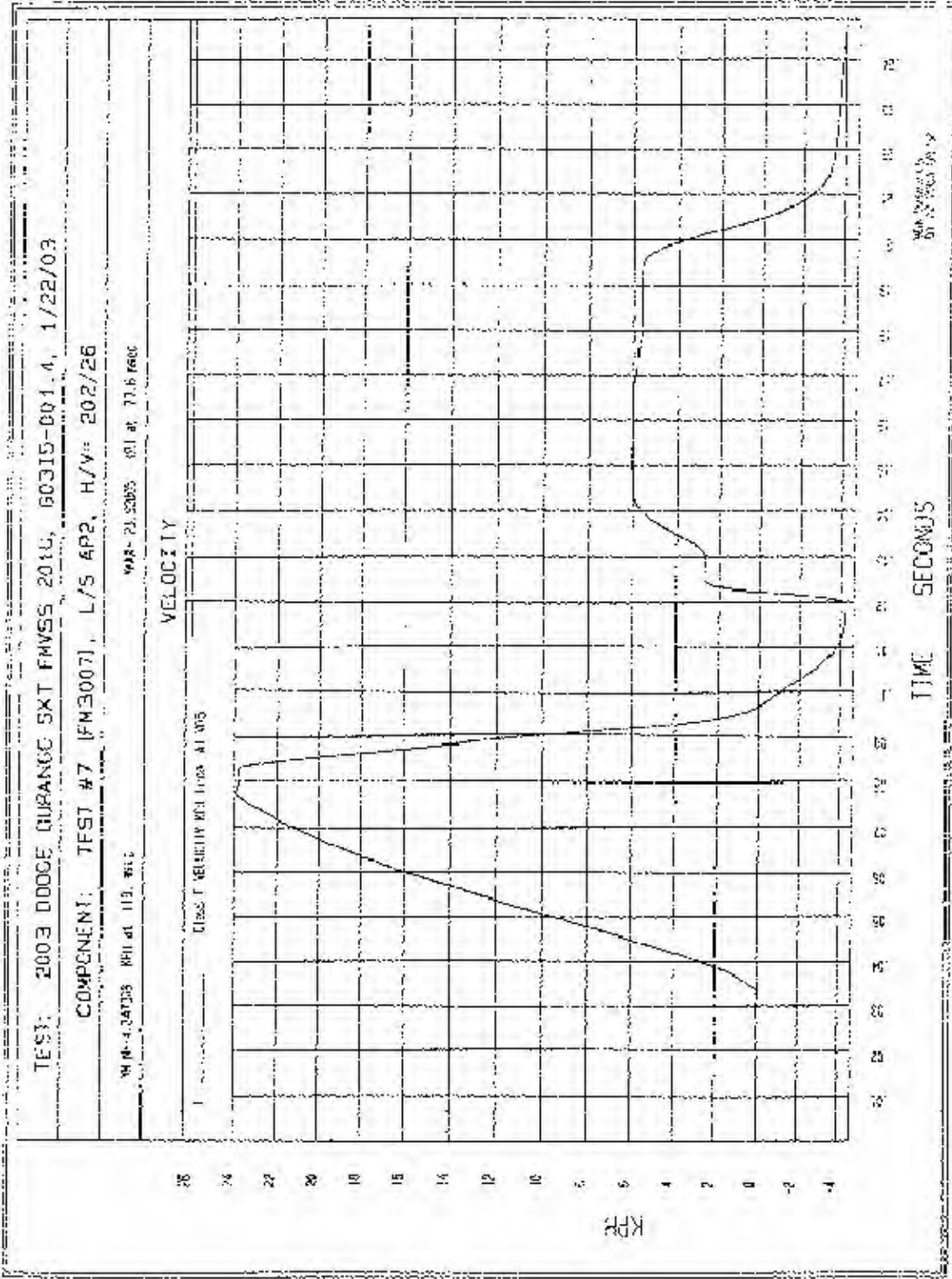






01/22/2003 03:15





MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/21/03

TEST #1

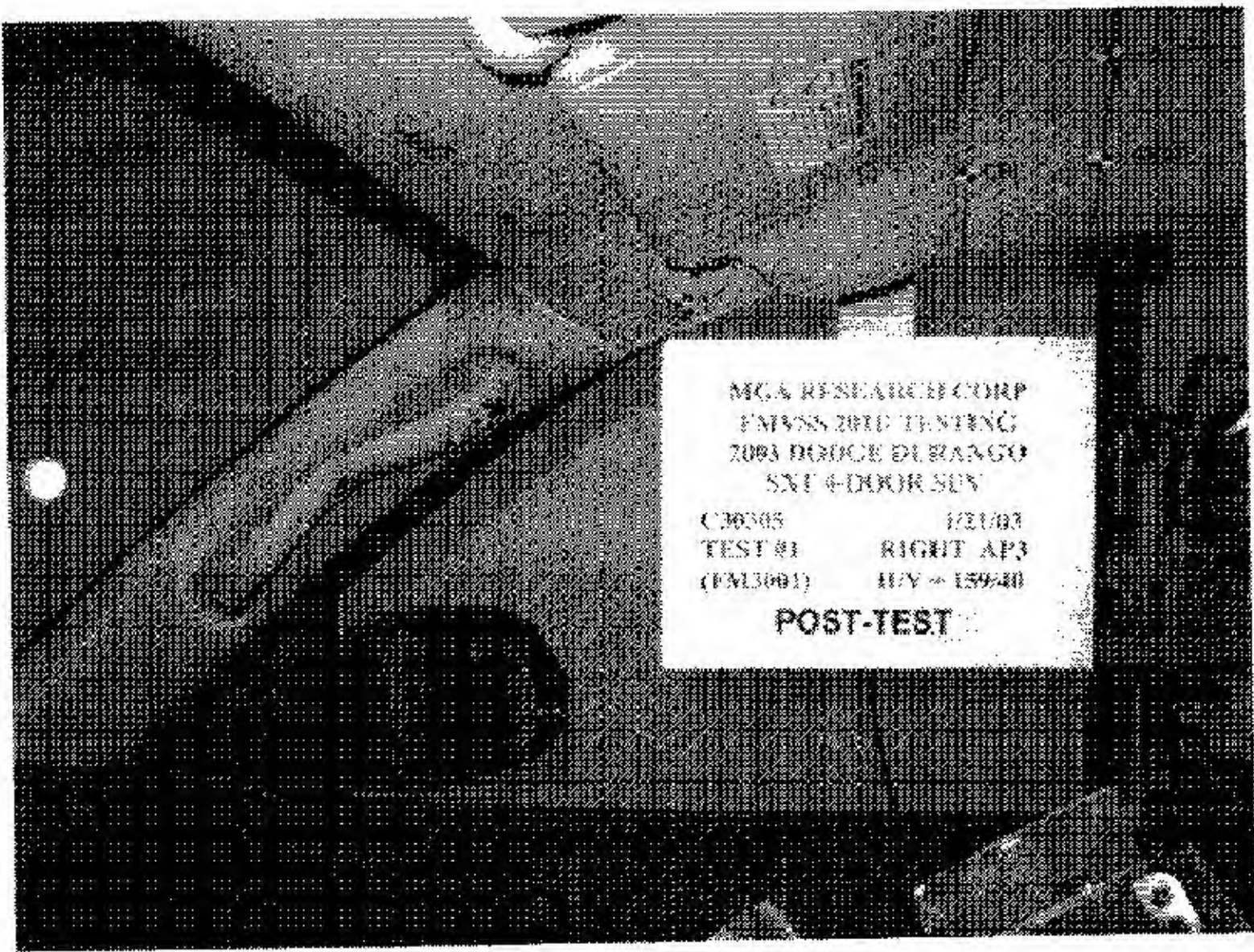
RIGHT AP3

(FM3001)

H/V = 159/50

PRE-TEST





MCA RESEARCH CORP  
FMVSS 201C TESTING  
2003 DODGE D150  
SXT 4-DOOR SUV

C30305 1/21/03  
TEST #1 RIGHT AP3  
(FMV3001) H/V ~ 139/40

**POST-TEST**



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/21/03

TEST #1

RIGHT AP3

(FM3001)

H/V = 159/40

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES: MGATP201U\_FRAME #2.3

DOC. NO.: MGATP201U\_FRAME #2  
REVISION NO.: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C30305 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURAND SIT

#### GENERAL TEST PARAMETERS:

Test Number: 1

Target (Vehicle Side) left/right: AP3

Temperature: 20 °F (C)

MGA Test Reference No.: FM3001

Humidity: 25 %

Approach Angles: Horizontal 159 °

Time of Test: 11:46 (am/pm)

Vertical 40 °

FMH Serial No: 35

#### TEST RESULTS:

HIC(d)	HIC	dt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>496</u>	<u>437</u>	<u>69</u>	<u>23.9</u>	<u>3</u>	<u>1</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
<u>X</u>	<u>5</u>	<u>J3524</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J3515</u>	<u>95.3</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J31051</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

ASSET DAMAGE WAS BEST DURING TESTING

Recorded By: [Signature] Approved By\*: [Signature] Date: 1/21/03

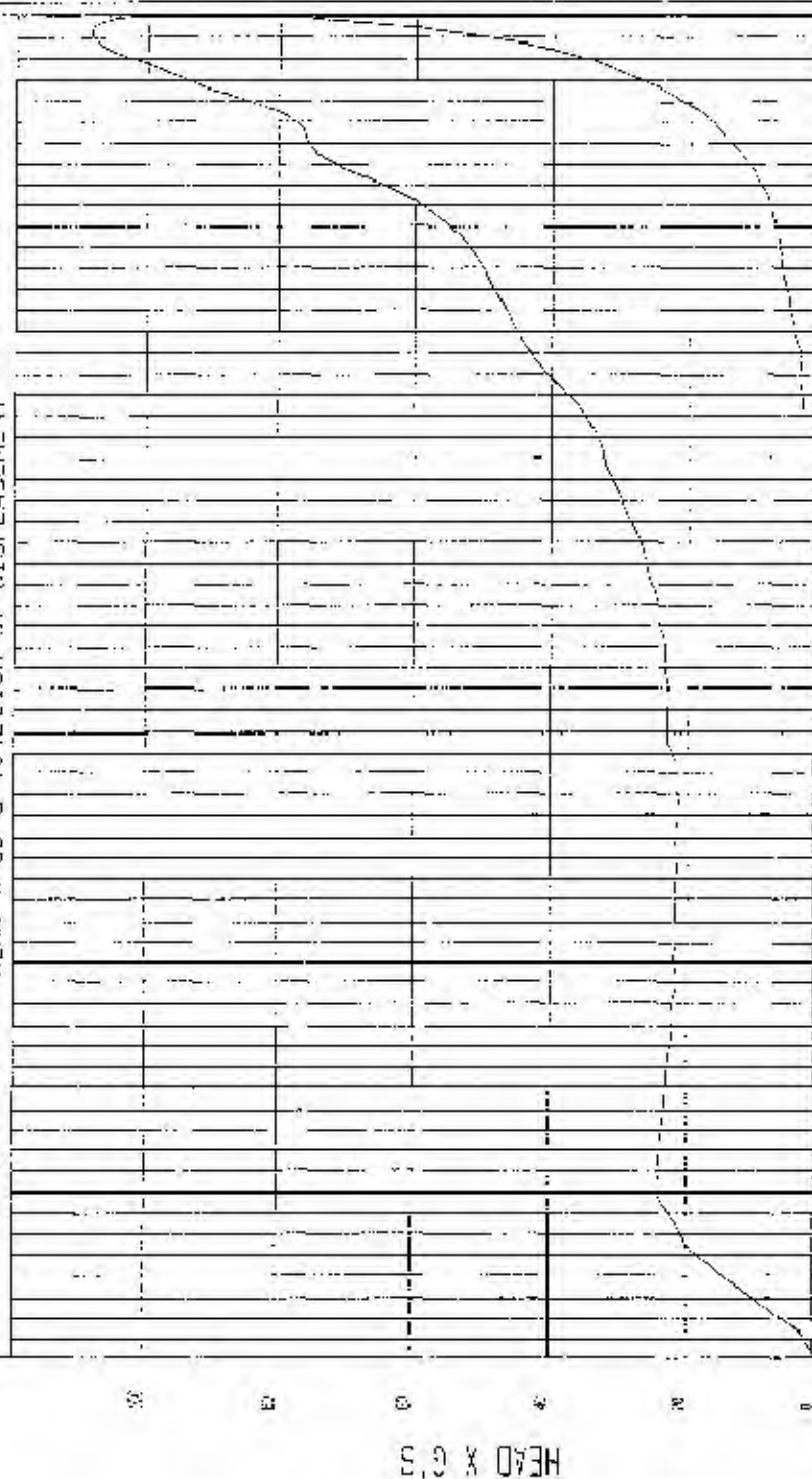
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3001AV.A05
. HIC = 436.60 calculated over 6.9 msec
T1 = 9.16 msec T2 = 16.64 msec
*****
HIC(d) = 496
Impact Velocity = 23.9 (kph)
```

TEST: 2WD3 DODGE DURANGO SXT FMY98 201U, G0315-001.4, 1/21/02

COMPONENT: TEST #1 (FMS001), R/S AP5, H/V= 159/0

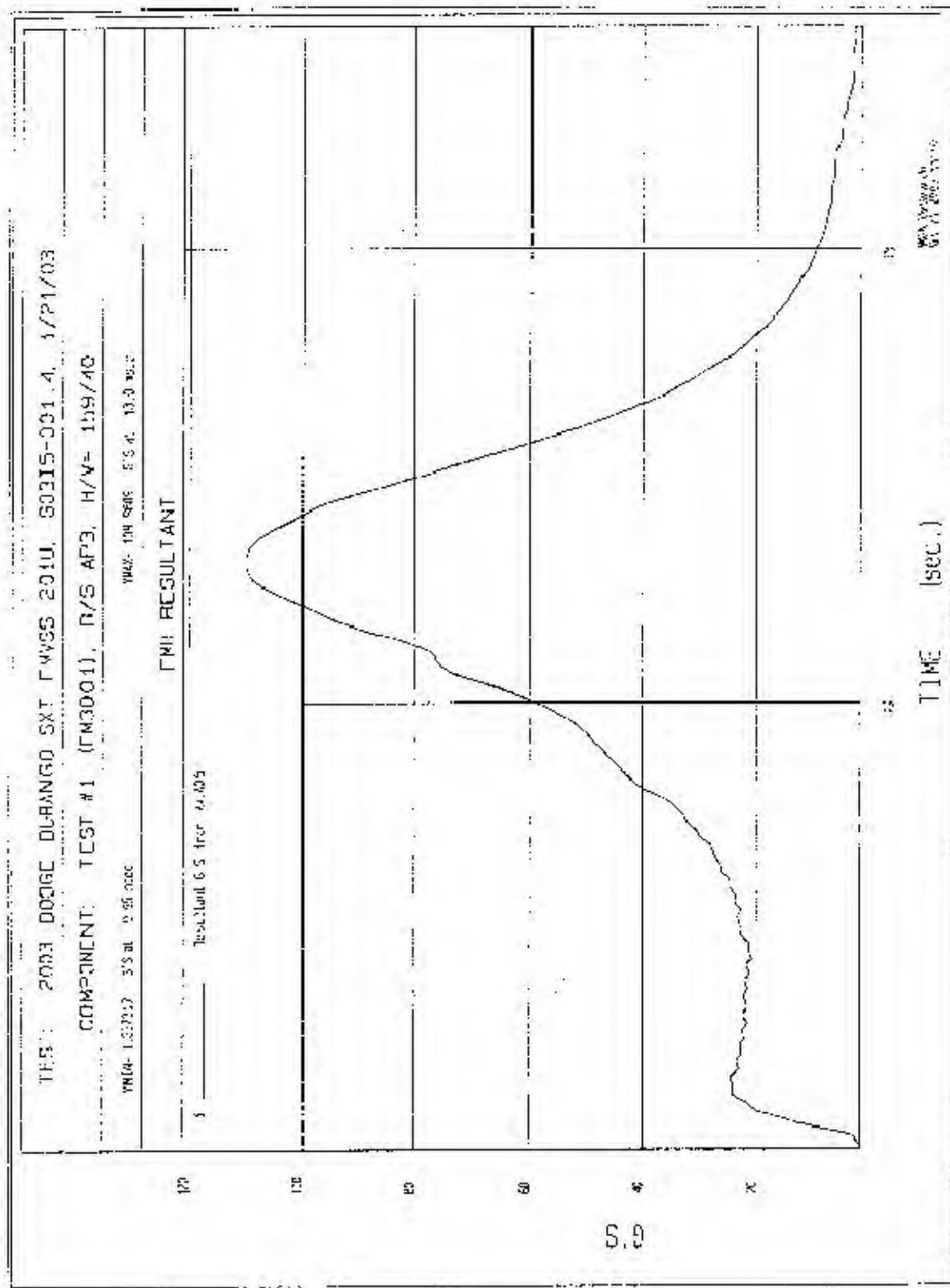
HEAD X as a function of DISPLACEMENT

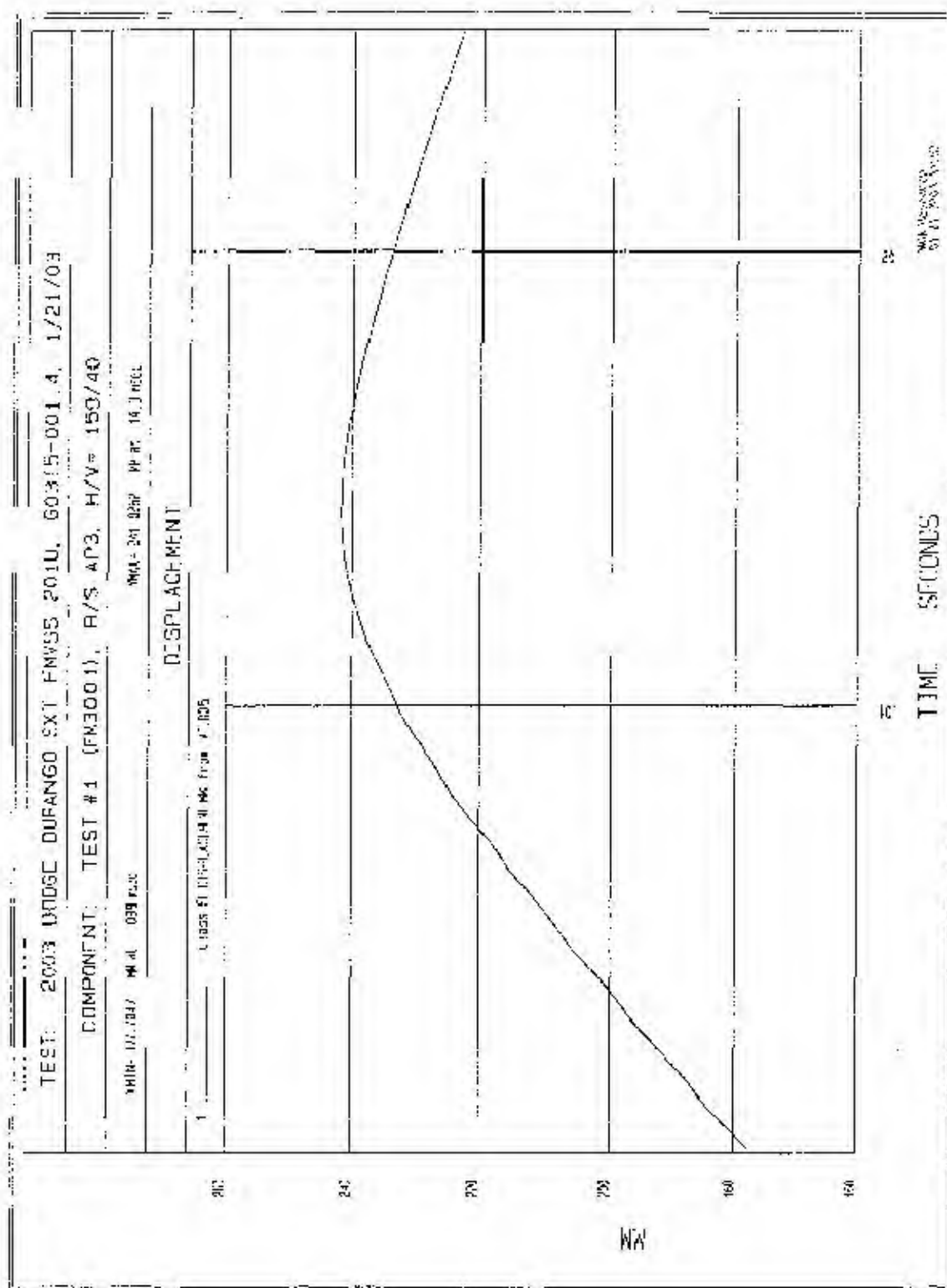


WVA Document  
02-11-2003 11:43

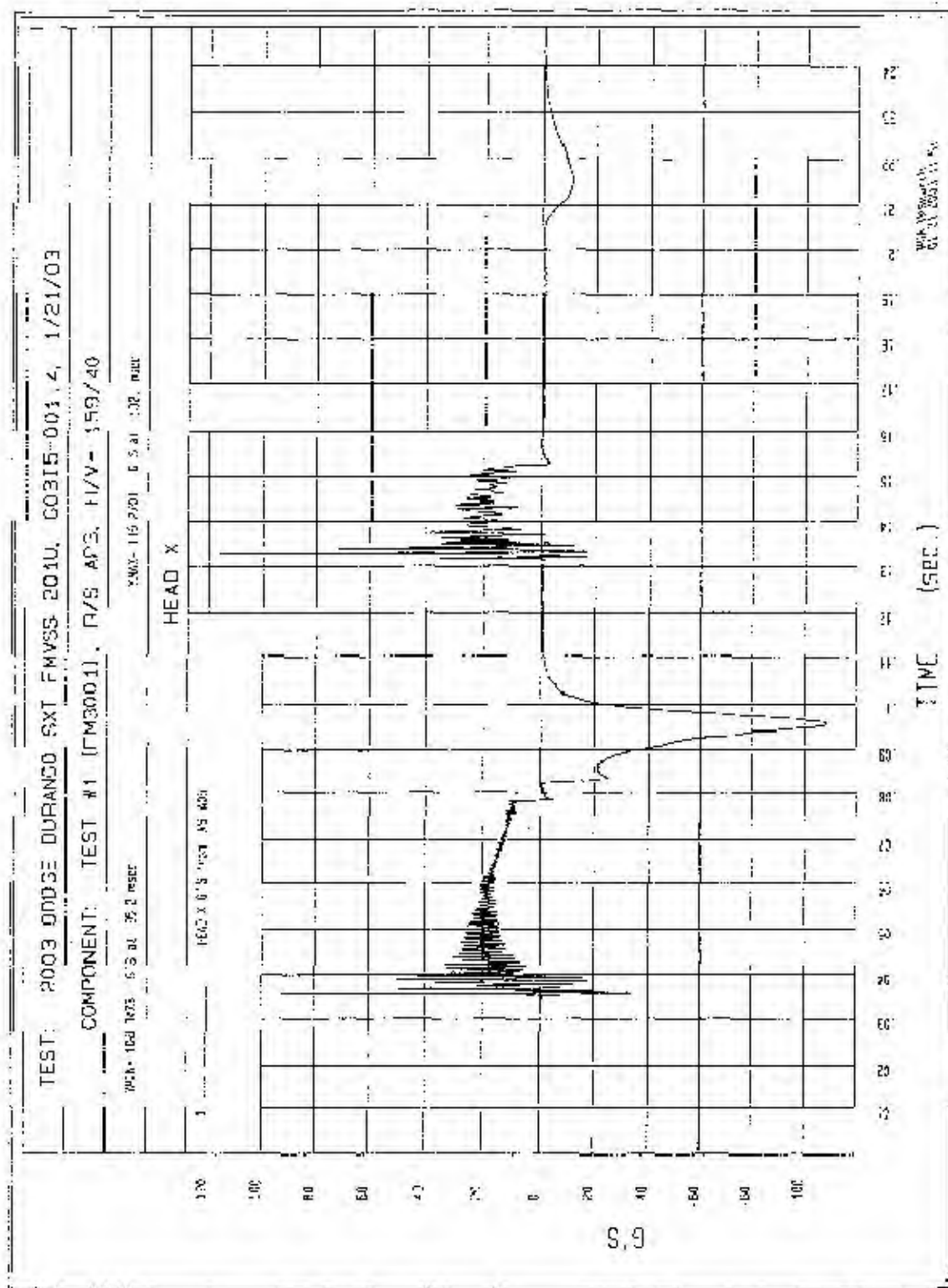
DISPLACEMENT MM

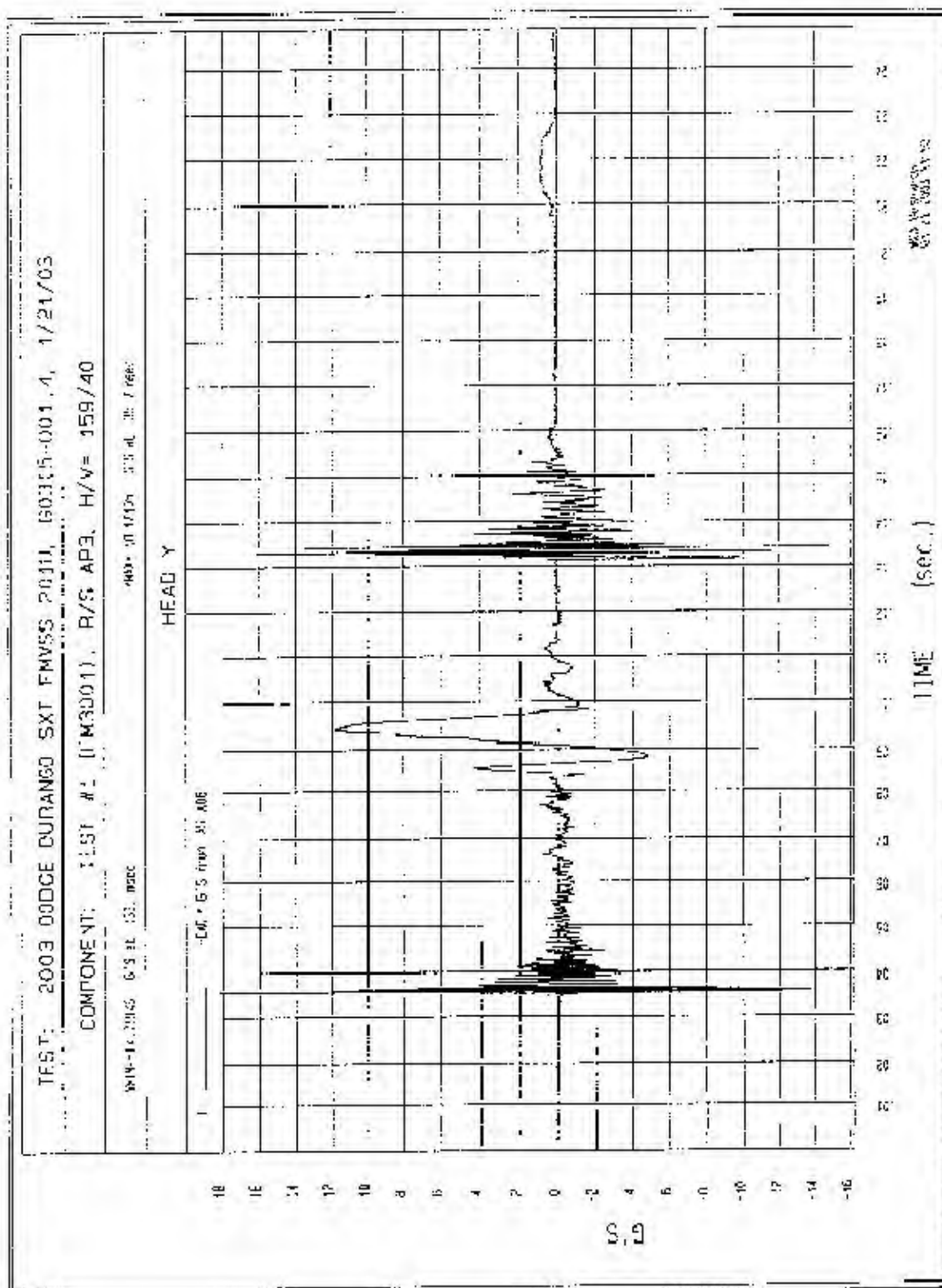
HEAD X (G'S)

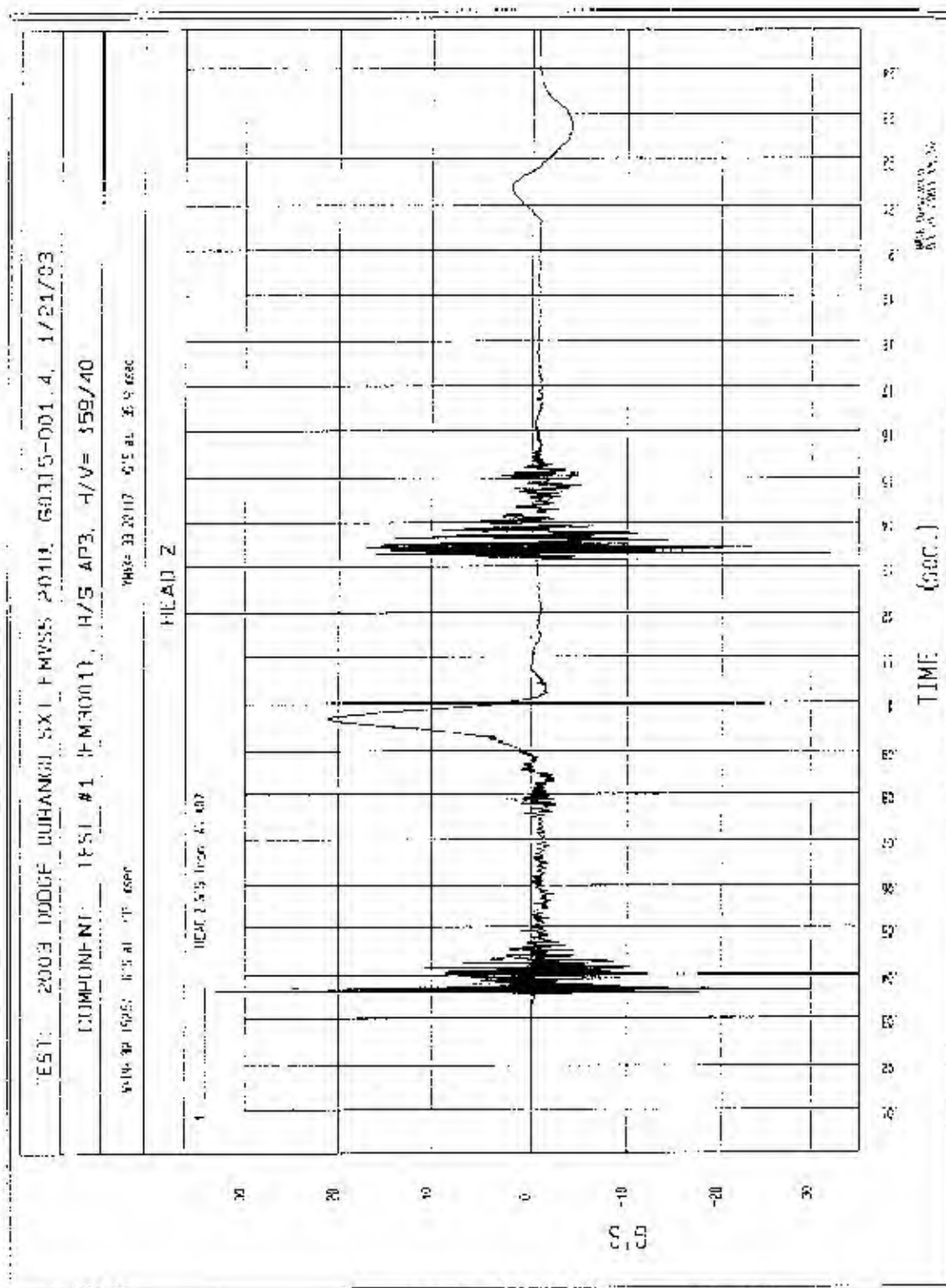


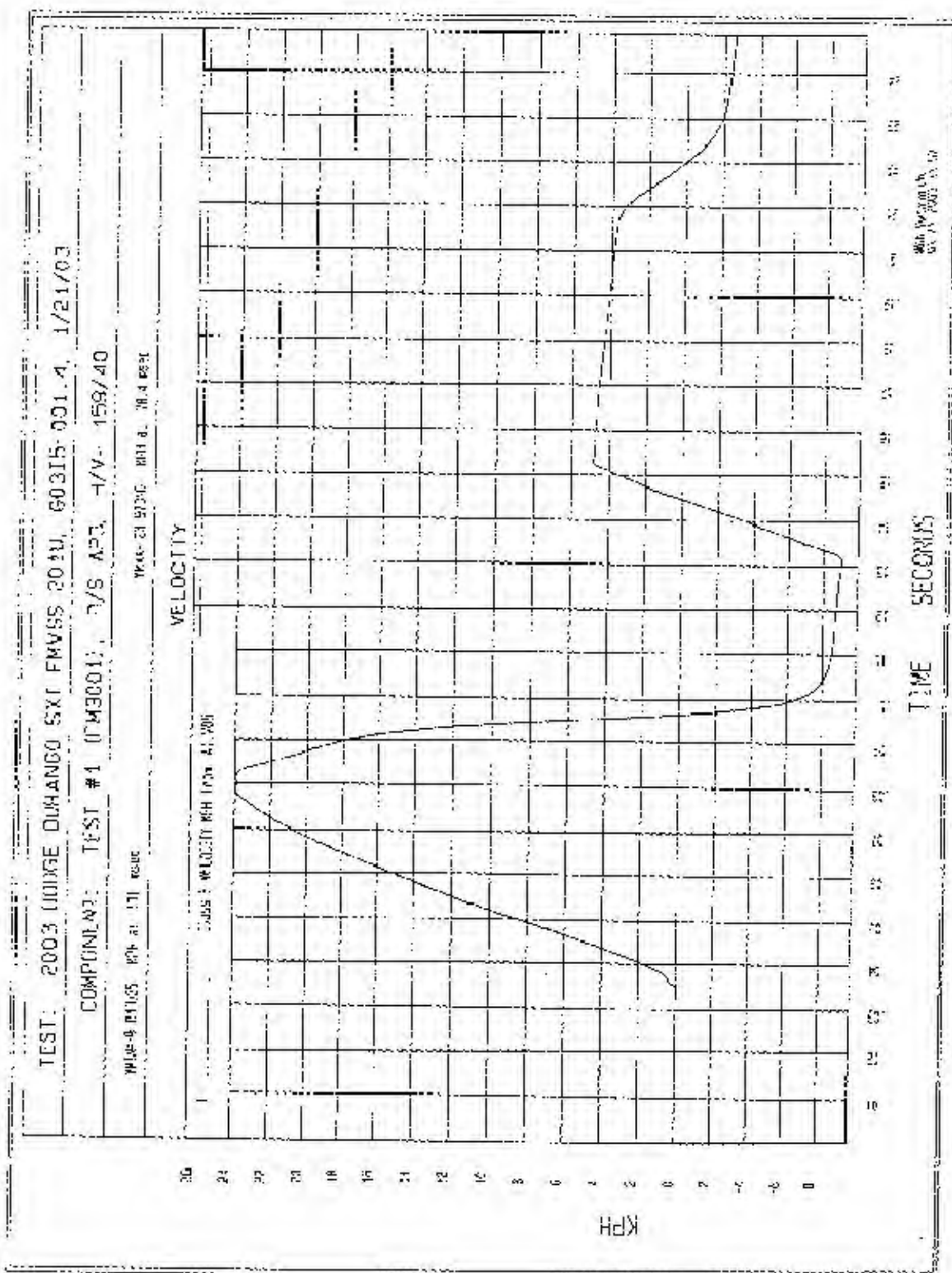












MGA RESEARCH CORP  
FMVSS 2010 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C38305                      1/21/03  
TEST #8                  RIGHT BPI  
(FM3005)              ILV = 90/25

PRE-TEST



MGA RESEARCH CORP  
FMVSS 2011 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305 1/21/03  
TEST #5 RIGHT BP1  
(FM3005) B/V = 90/25

POST-TEST



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/21/03

TEST #5

RIGHT BPI

(FM3005)

H/V = 90/25

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES: MGATP201U\_FRAME#2.3

DOC NO: MGATP201U\_FRAME#2  
REVISION NO: 4  
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### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C302305 VEHICLE YR/MAKE/MODEL: 2003 RIDGE CR/M60

#### GENERAL TEST PARAMETERS:

Test Number: 5

Target (Vehicle Side): left/right: BP1

Temperature: 22 °C

MGA Test Reference No: FM30025

Humidity: 22 %

Approach Angles: Horizontal: 90 °

Time of Test: 3:19 am/pm

Vertical: 2.5 °

FMH Serial No: 36

#### TEST RESULTS:

HIC(6)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
595	568	6.6	23.3	40	2

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
X	5	J35923	100.9	1.21	1.21
Y	6	J35916	100.7	1.23	1.23
Z	7	J35919	100.8	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NE VISIBL DAMAGE

Recorded By: [Signature] Approved By\*: [Signature] Date: 1/21/03

\*Only necessary for NHTSA (Government) Compliance testing.

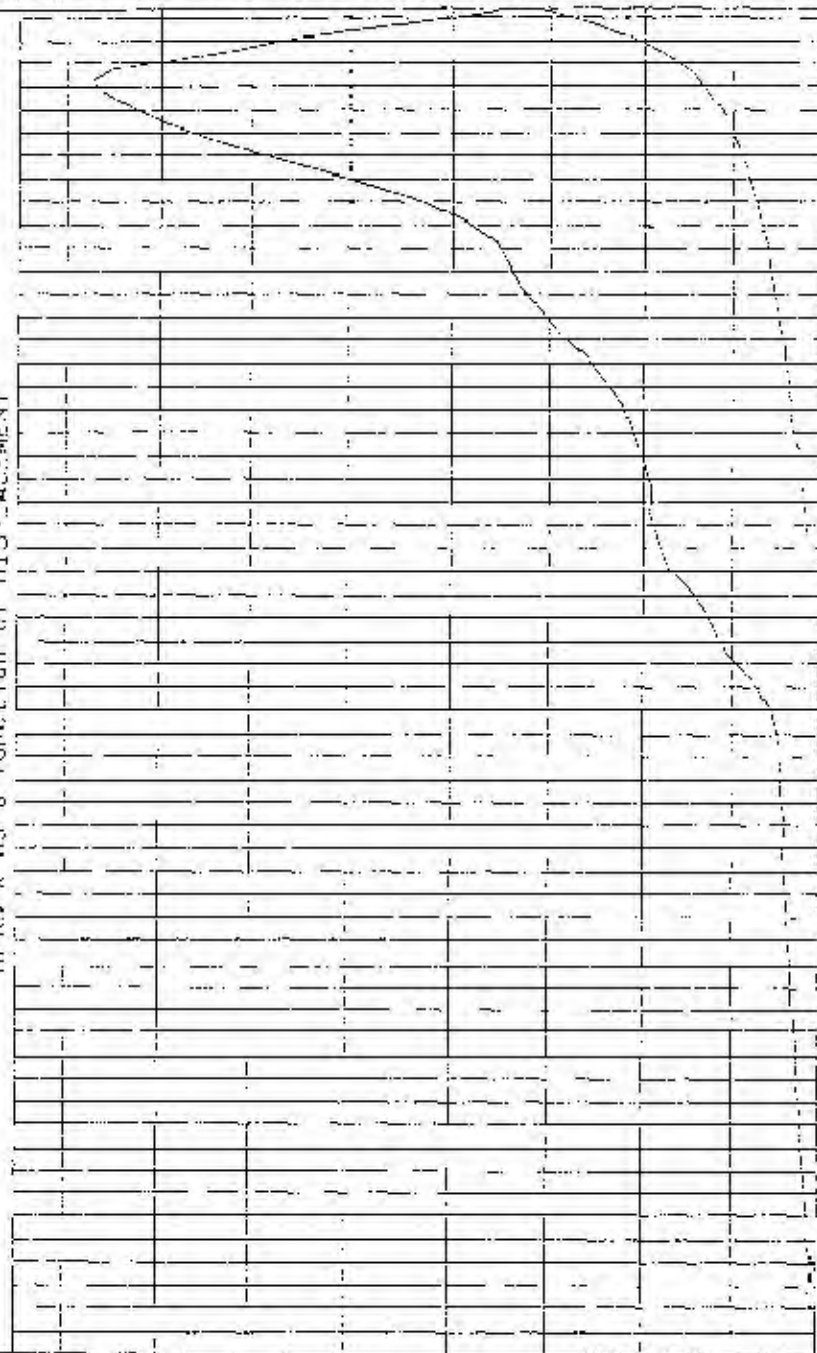
```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NETSA\FM3G05AV.A05
The HIC = 567.58 calculated over 6.6 msec
T1 = 7.07 msec T2 = 13.65 msec
*****
HIC(d) = 595
Impact Velocity = 23.3 (kph)
```

TEST: 2003 300CF DURAND SXT FMV55 2010, C0315-001.4, 1/21/03

COMPONENT: TEST #5 (FM3005), R/S BP1, R/V= 90/25

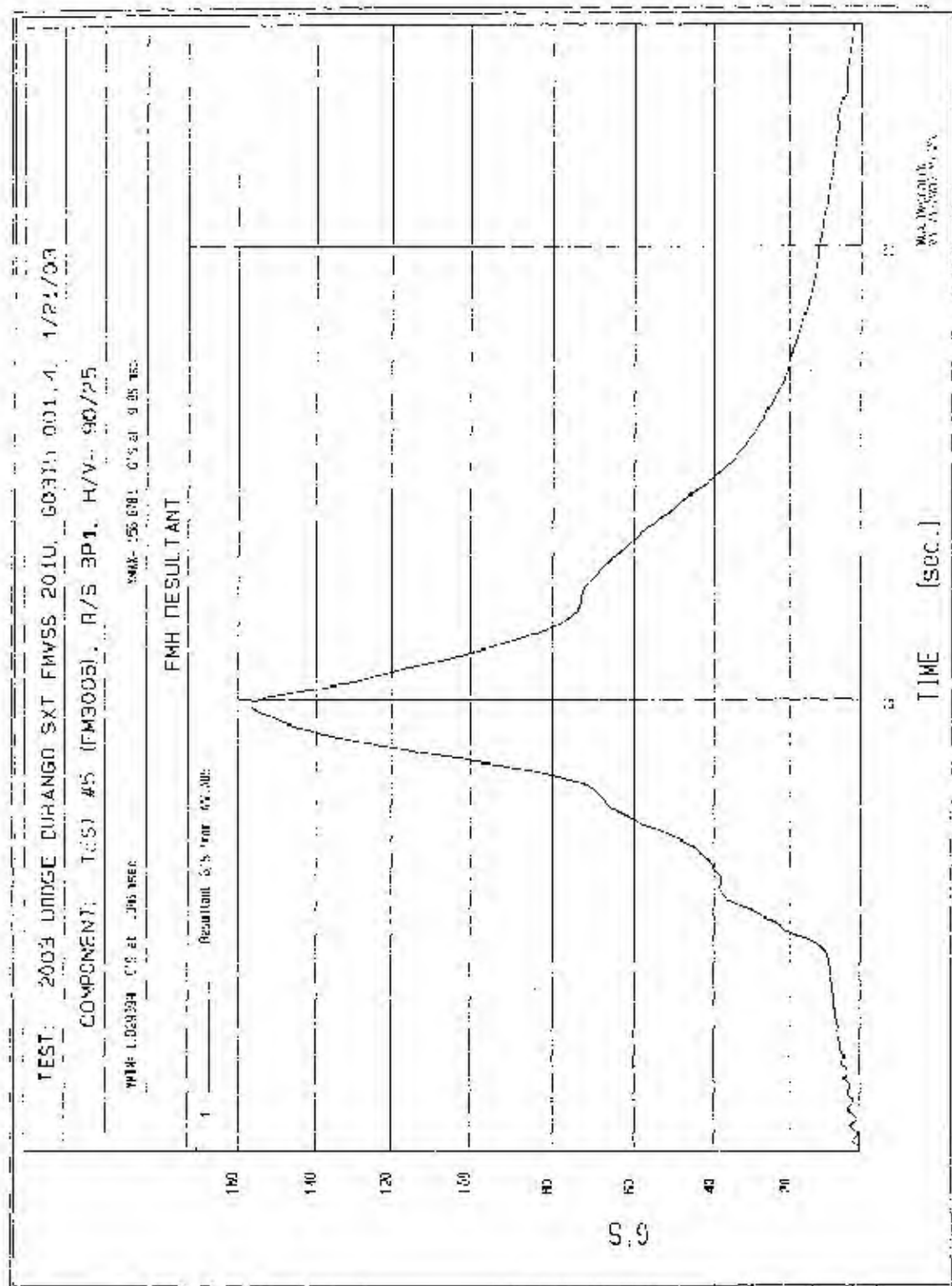
HEAD X as a function of DISPLACEMENT

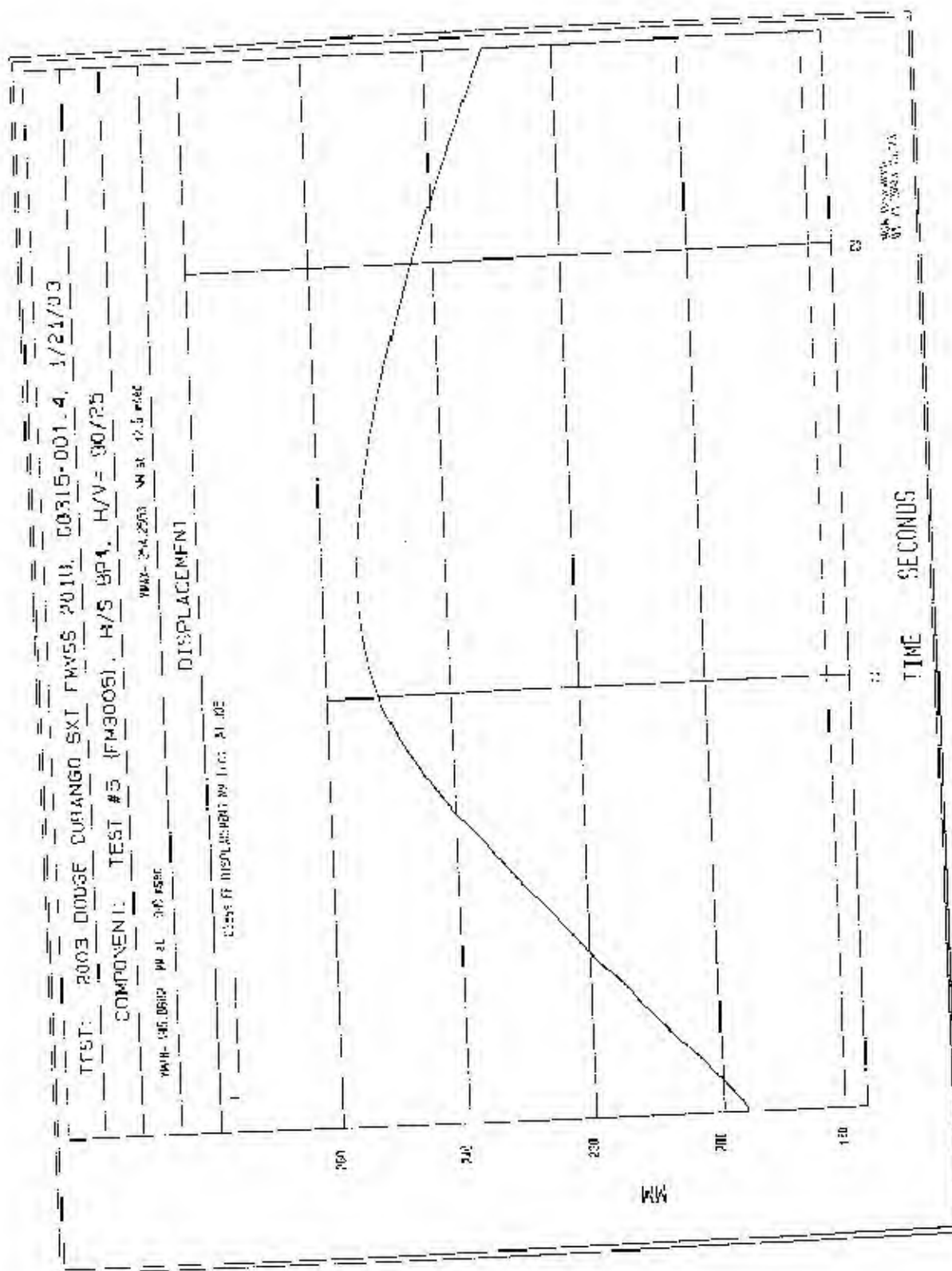
HEAD X G'S



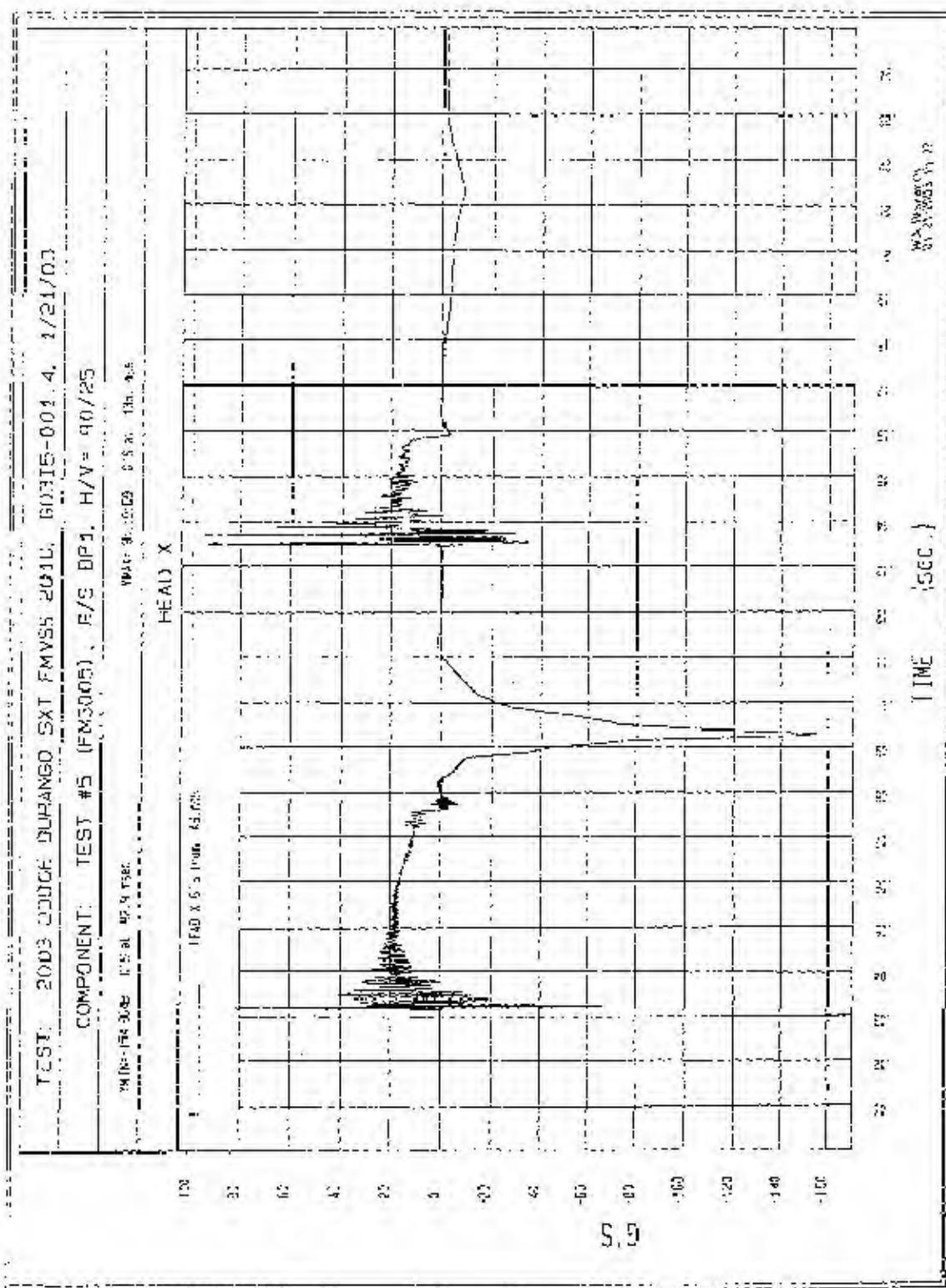
DISPLACEMENT MM

WAVELENGTH  
0.0000000000









TEST	2003 DODGE DURANGO SXT	FWYSS 2010, 60315-001	4, 1/21/03
TEST	2003 DODGE DURANGO SXT	FWYSS 2010, 60315-001	4, 1/21/03

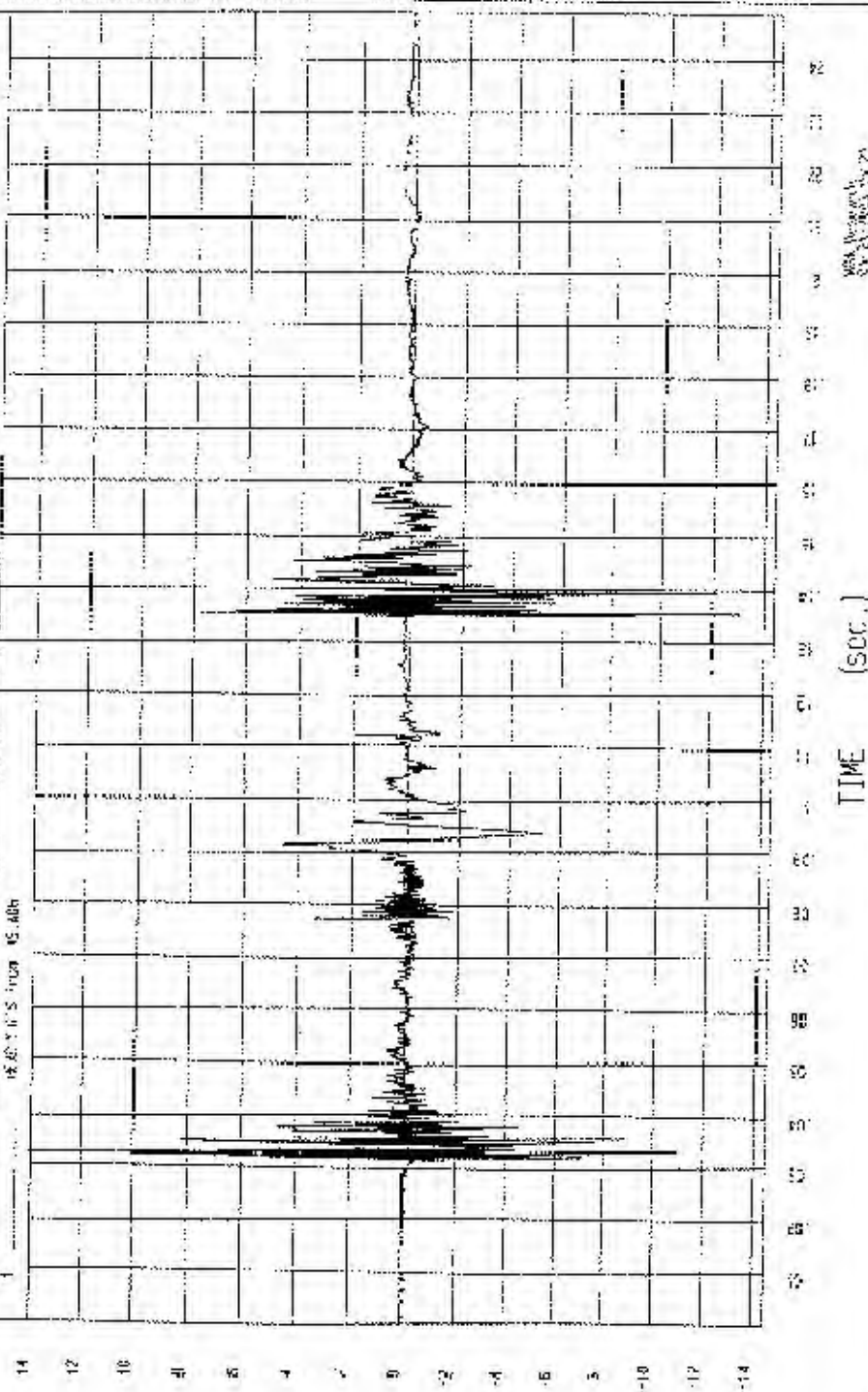
COMPONENT: TEST #5 (FV=C05), A/S BP1, H/V= 90/25

0976-11 JBYBZ 0'3 AT 174 ZONE

PMU- 14.1438 C-9 dL 30 g 3500

三、

4095 4096 4097 4098 4099 4100 4101 4102 4103 4104 4105 4106 4107 4108 4109 4110 4111 4112 4113 4114 4115 4116 4117 4118 4119 4120 4121 4122 4123 4124 4125 4126 4127 4128 4129 4130 4131 4132 4133 4134 4135 4136 4137 4138 4139 4140 4141 4142 4143 4144 4145 4146 4147 4148 4149 4150 4151 4152 4153 4154 4155 4156 4157 4158 4159 4160 4161 4162 4163 4164 4165 4166 4167 4168 4169 4170 4171 4172 4173 4174 4175 4176 4177 4178 4179 4180 4181 4182 4183 4184 4185 4186 4187 4188 4189 4190 4191 4192 4193 4194 4195 4196 4197 4198 4199 4200 4201 4202 4203 4204 4205 4206 4207 4208 4209 4210 4211 4212 4213 4214 4215 4216 4217 4218 4219 4220 4221 4222 4223 4224 4225 4226 4227 4228 4229 4230 4231 4232 4233 4234 4235 4236 4237 4238 4239 4240 4241 4242 4243 4244 4245 4246 4247 4248 4249 4250 4251 4252 4253 4254 4255 4256 4257 4258 4259 4260 4261 4262 4263 4264 4265 4266 4267 4268 4269 4270 4271 4272 4273 4274 4275 4276 4277 4278 4279 4280 4281 4282 4283 4284 4285 4286 4287 4288 4289 4290 4291 4292 4293 4294 4295 4296 4297 4298 4299 4300 4301 4302 4303 4304 4305 4306 4307 4308 4309 4310 4311 4312 4313 4314 4315 4316 4317 4318 4319 4320 4321 4322 4323 4324 4325 4326 4327 4328 4329 4330 4331 4332 4333 4334 4335 4336 4337 4338 4339 4340 4341 4342 4343 4344 4345 4346 4347 4348 4349 4350 4351 4352 4353 4354 4355 4356 4357 4358 4359 4360 4361 4362 4363 4364 4365 4366 4367 4368 4369 4370 4371 4372 4373 4374 4375 4376 4377 4378 4379 4380 4381 4382 4383 4384 4385 4386 4387 4388 4389 4390 4391 4392 4393 4394 4395 4396 4397 4398 4399 4400 4401 4402 4403 4404 4405 4406 4407 4408 4409 4410 4411 4412 4413 4414 4415 4416 4417 4418 4419 4420 4421 4422 4423 4424 4425 4426 4427 4428 4429 4430 4431 4432 4433 4434 4435 4436 4437 4438 4439 4440 4441 4442 4443 4444 4445 4446 4447 4448 4449 4450 4451 4452 4453 4454 4455 4456 4457 4458 4459 4460 4461 4462 4463 4464 4465 4466 4467 4468 4469 4470 4471 4472 4473 4474 4475 4476 4477 4478 4479 4480 4481 4482 4483 4484 4485 4486 4487 4488 4489 4490 4491 4492 4493 4494 4495 4496 4497 4498 4499 4500 4501 4502 4503 4504 4505 4506 4507 4508 4509 4510 4511 4512 4513 4514 4515 4516 4517 4518 4519 4520 4521 4522 4523 4524 4525 4526 4527 4528 4529 4530 4531 4532 4533 4534 4535 4536 4537 4538 4539 4540 4541 4542 4543 4544 4545 4546 4547 4548 4549 4550 4551 4552 4553 4554 4555 4556 4557 4558 4559 4560 4561 4562 4563 4564 4565 4566 4567 4568 4569 4570 4571 4572 4573 4574 4575 4576 4577 4578 4579 4580 4581 4582 4583 4584 4585 4586 4587 4588 4589 4590 4591 4592 4593 4594 4595 4596 4597 4598 4599 4600 4601 4602 4603 4604 4605 4606 4607 4608 4609 4610 4611 4612 4613 4614 4615 4616 4617 4618 4619 4620 4621 4622 4623 4624 4625 4626 4627 4628 4629 4630 4631 4632 4633 4634 4635 4636 4637 4638 4639 4640 4641 4642 4643 4644 4645 4646 4647 4648 4649 4650 4651 4652 4653 4654 4655 4656 4657 4658 4659 4660 4661 4662 4663 4664 4665 4666 4667 4668 4669 4670 4671 4672 4673 4674 4675 4676 4677 4678 4679 4680 4681 4682 4683 4684 4685 4686 4687 4688 4689 4690 4691 4692 4693 4694 4695 4696 4697 4698 4699 4700 4701 4702 4703 4704 4705 4706 4707 4708 4709 4710 4711 4712 4713 4714 4715 4716 4717 4718 4719 4720 4721 4722 4723 4724 4725 4726 4727 4728 4729 4730 4731 4732 4733 4734 4735 4736 4737 4738 4739 4740 4741 4742 4743 4744 4745 4746 4747 4748 4749 4750 4751 4752 4753 4754 4755 4756 4757 4758 4759 4760 4761 4762 4763 4764 4765 4766 4767 4768 4769 4770 4771 4772 4773 4774 4775 4776 4777 4778 4779 4780 4781 4782 4783 4784 4785 4786 4787 4788 4789 4790 4791 4792 4793 4794 4795 4796 4797 4798 4799 4800 4801 4802 4803 4804 4805 4806 4807 4808 4809 4810 4811 4812 4813 4814 4815 4816 4817 4818 4819 4820 4821 4822 4823 4824 4825 4826 4827 4828 4829 4830 4831 4832 4833 4834 4835 4836 4837 4838 4839 4840 4841 4842 4843 4844 4845 4846 4847 4848 4849 4850 4851 4852 4853 4854 4855 4856 4857 4858 4859 4860 4861 4862 4863 4864 4865 4866 4867 4868 4869 4870 4871 4872 4873 4874 4875 4876 4877 4878 4879 4880 4881 4882 4883 4884 4885 4886 4887 4888 4889 4890 4891 4892 4893 4894 4895 4896 4897 4898 4899 4900 4901 4902 4903 4904 4905 4906 4907 4908 4909 4910 4911 4912 4913



TEST: 2003 DODGE DURANGO SXT FMVSS 201U, 60319-001.4, 1/21/03

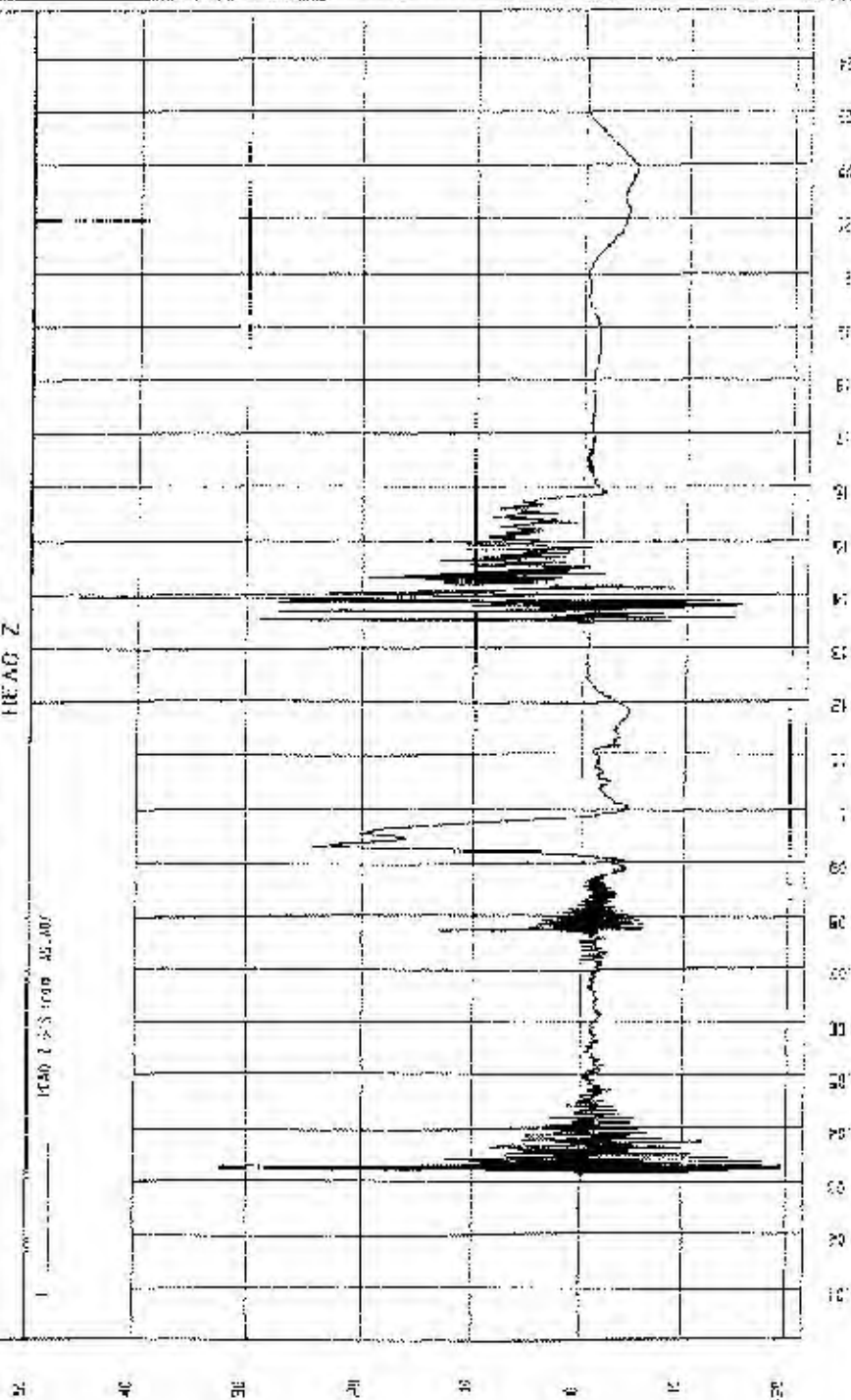
COMPONENT: TEST #5 (FM3005), P/S DP1, H/V= 90/25

FM26-03 5013 0.3 AL 32.5 mm

YMS-40 BRCS 0.1 at 1.0 mm

HEAD Z

HEAD 1 to 3 from 45.007



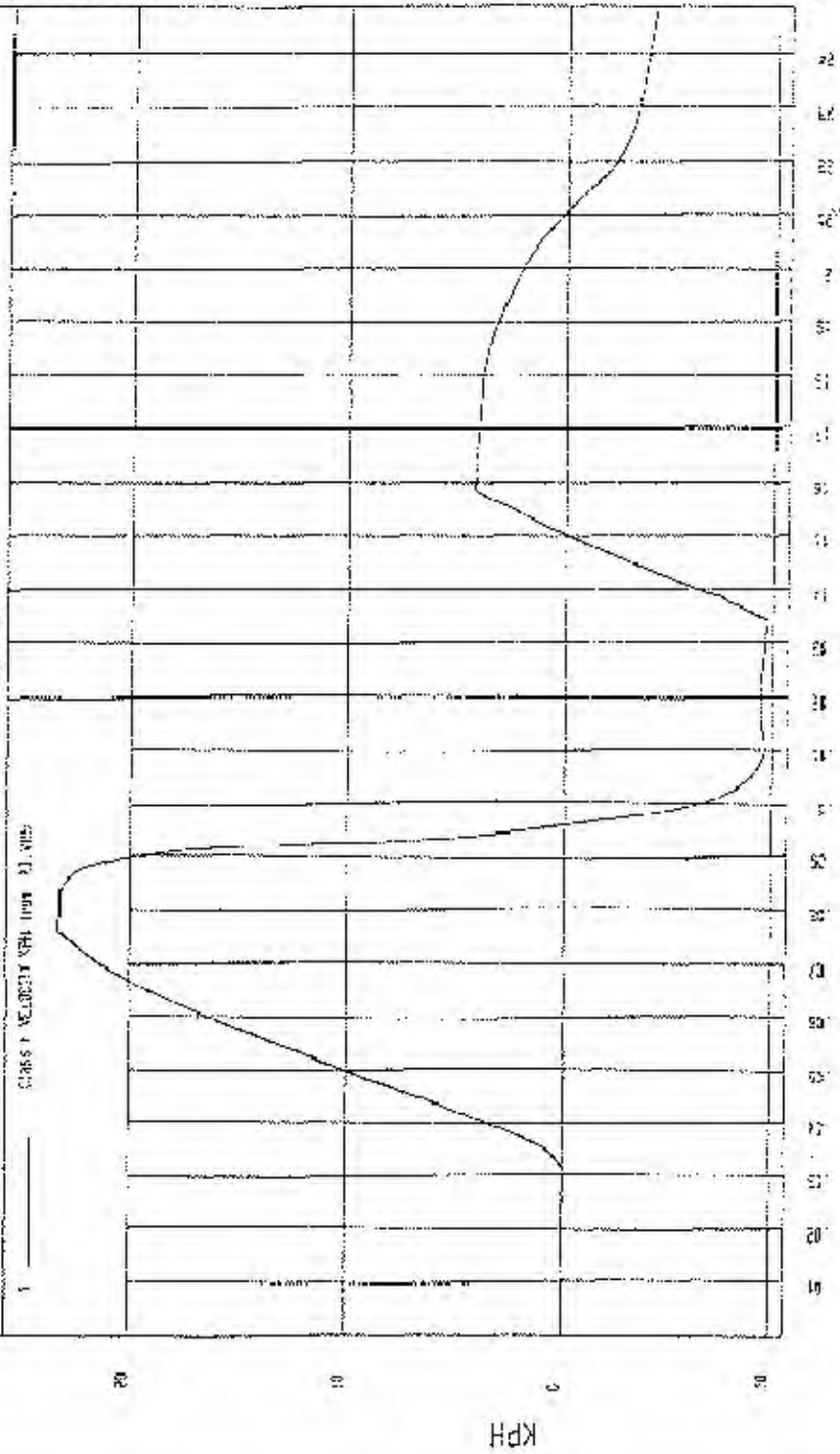
COMPONENT: TEST #5 (FM3005), A/S BPL, H/V= 90/25

DATE: 11/11/81 BY: J. J. J. J. J.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

VELOCITY

CALL: 1-800-1428, 1-800-734-4590



MGA RESEARCH CORP  
FMVSS 2011 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

E2203

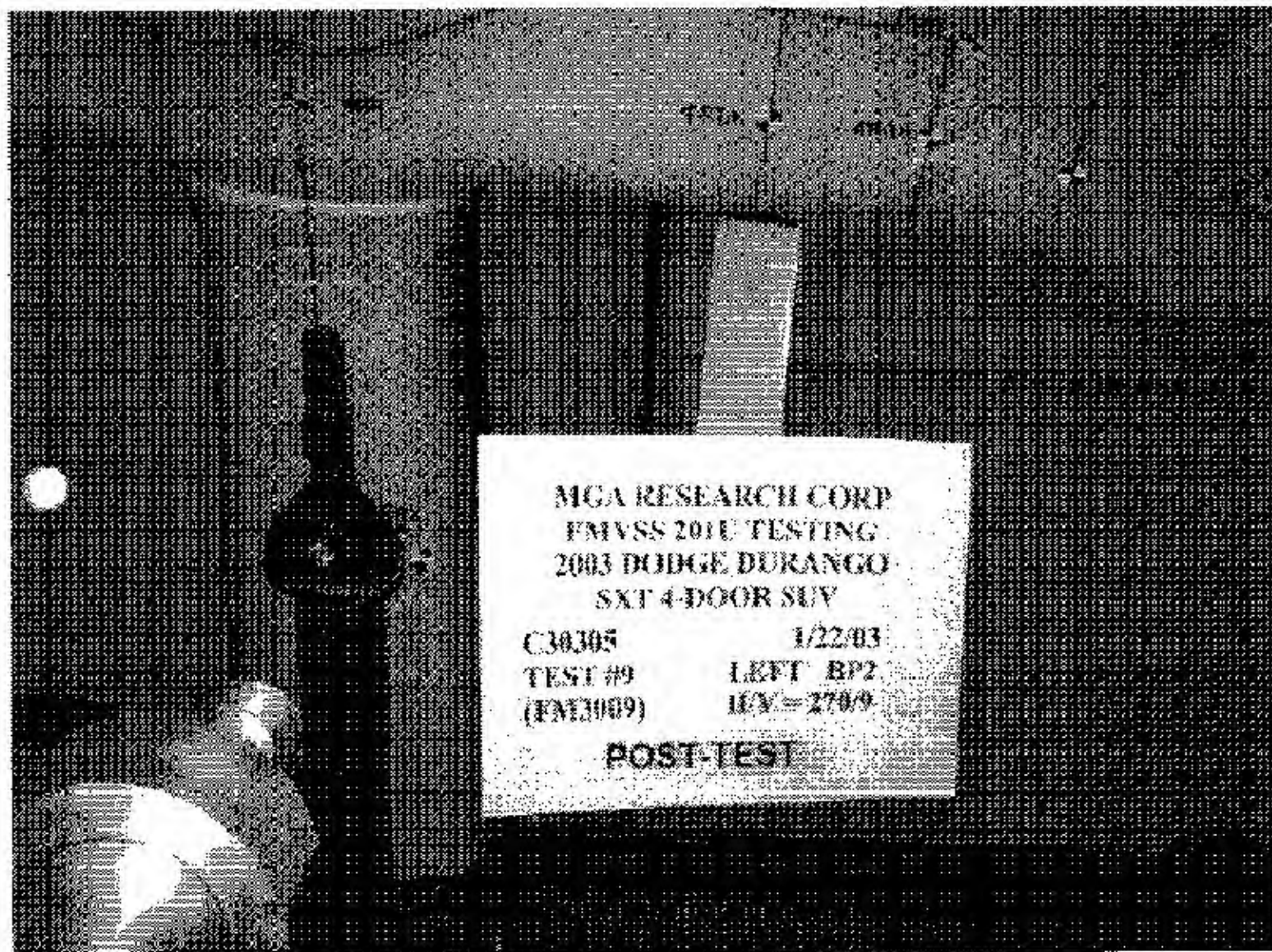
TEST #9

LEFT HP2

(FM3009)

REV - 2/08





MGA RESEARCH CORP  
FMVSS 201E TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305	1/22/03
TEST #9	LEFT BP2
(FMT3009)	ICV = 270/9

POST-TEST



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C303015	1/22/03
TEST #9	LEFT BP2
(FM3009)	H/V = 270/9

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES: MGATP201U\_FRAME #2.3

DOC. NO.: MGATP201U\_FRAME #2  
REVISION NO.: 4  
PAGE 5 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C30305 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durango

#### GENERAL TEST PARAMETERS:

Test Number: 9

Target (Vehicle Side): Left BP2

Temperature: 72 °F 22

MGA Test Reference No.: FM3009

Humidity: 22 %

Approach Angles: Horizontal 270 °

Time of Test: 11:08 am

Vertical 9 °

FMH Serial No: 35

#### TEST RESULTS:

HIC(d)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>613</u>	<u>593</u>	<u>3.5</u>	<u>23.7</u>	<u>4</u>	<u>1</u>

#### INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
<u>X</u>	<u>5</u>	<u>JS647</u>	<u>-108.2</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>JS643</u>	<u>102.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>JS633</u>	<u>97.8</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By\*: [Signature] Date: 1/22/03

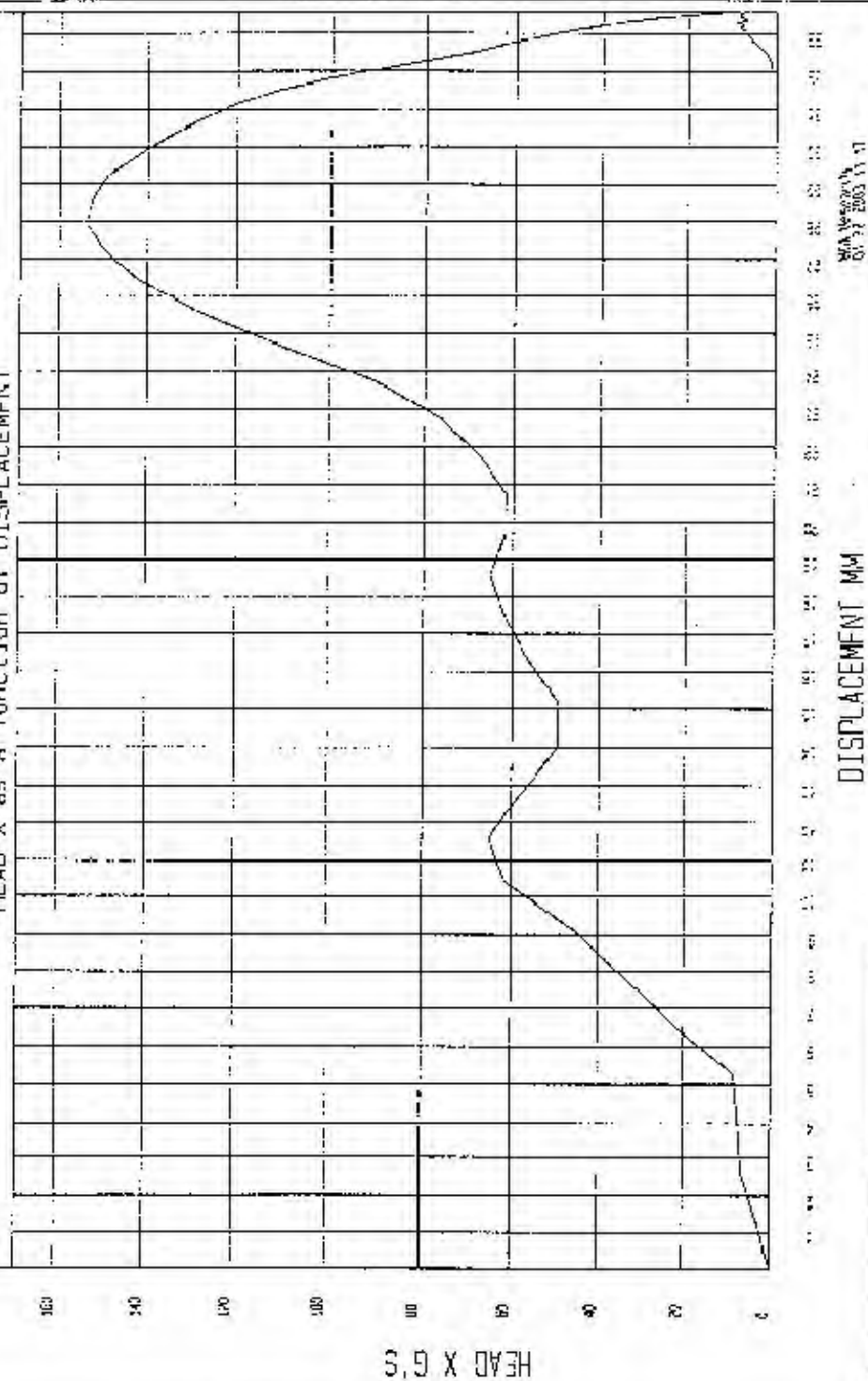
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3009AV.A05
    HIC = 592.59 calculated over 3.5 msec
T1 = 3.69 msec T2 = 7.17 msec
*****
HIC(d) = 613
Impact Velocity = 23.7 (kph)
```

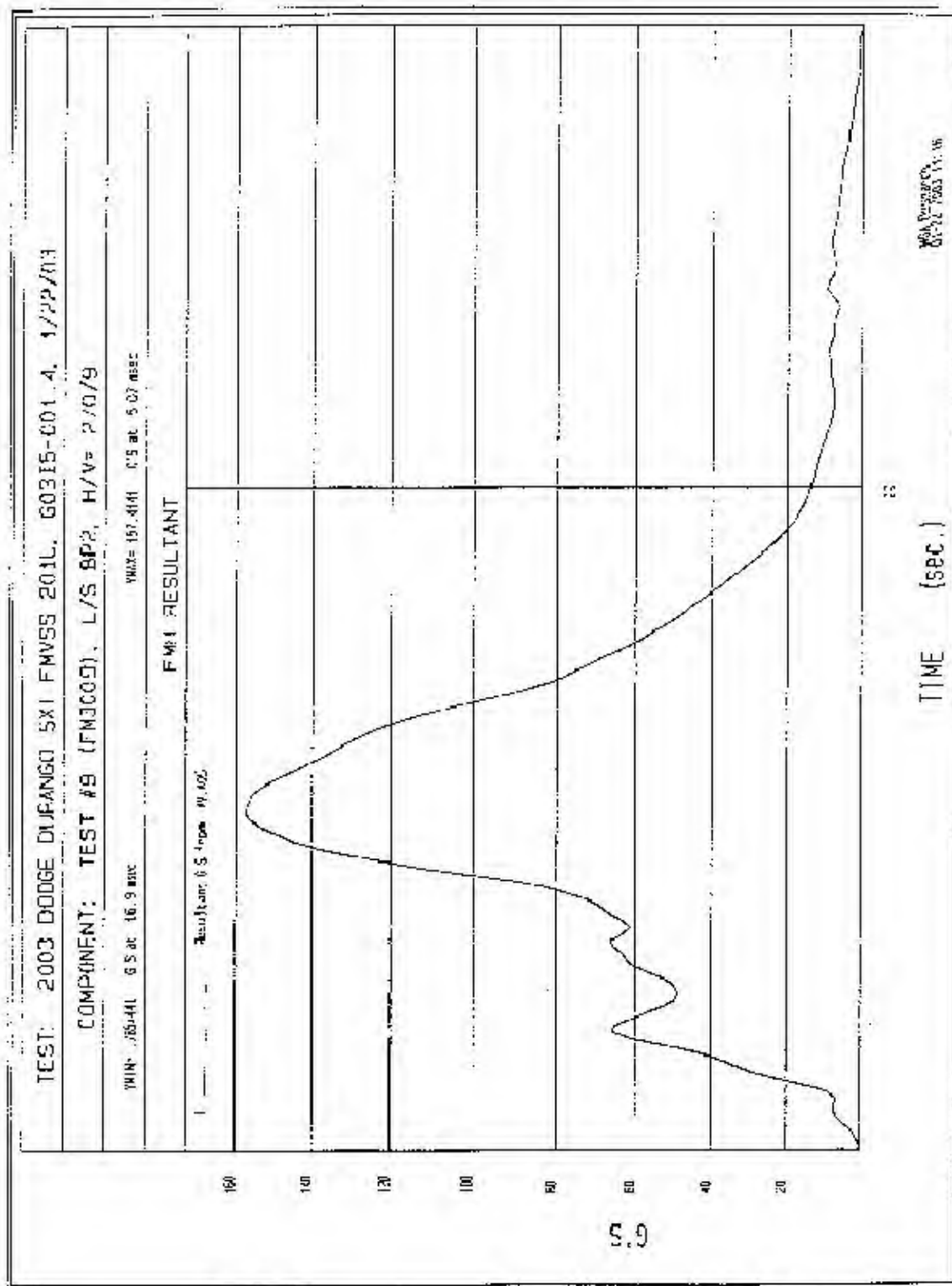
TEST: 2003 DODGE DURANGO SXT FMVSS 2010, G0315-001.4, 1/23/03

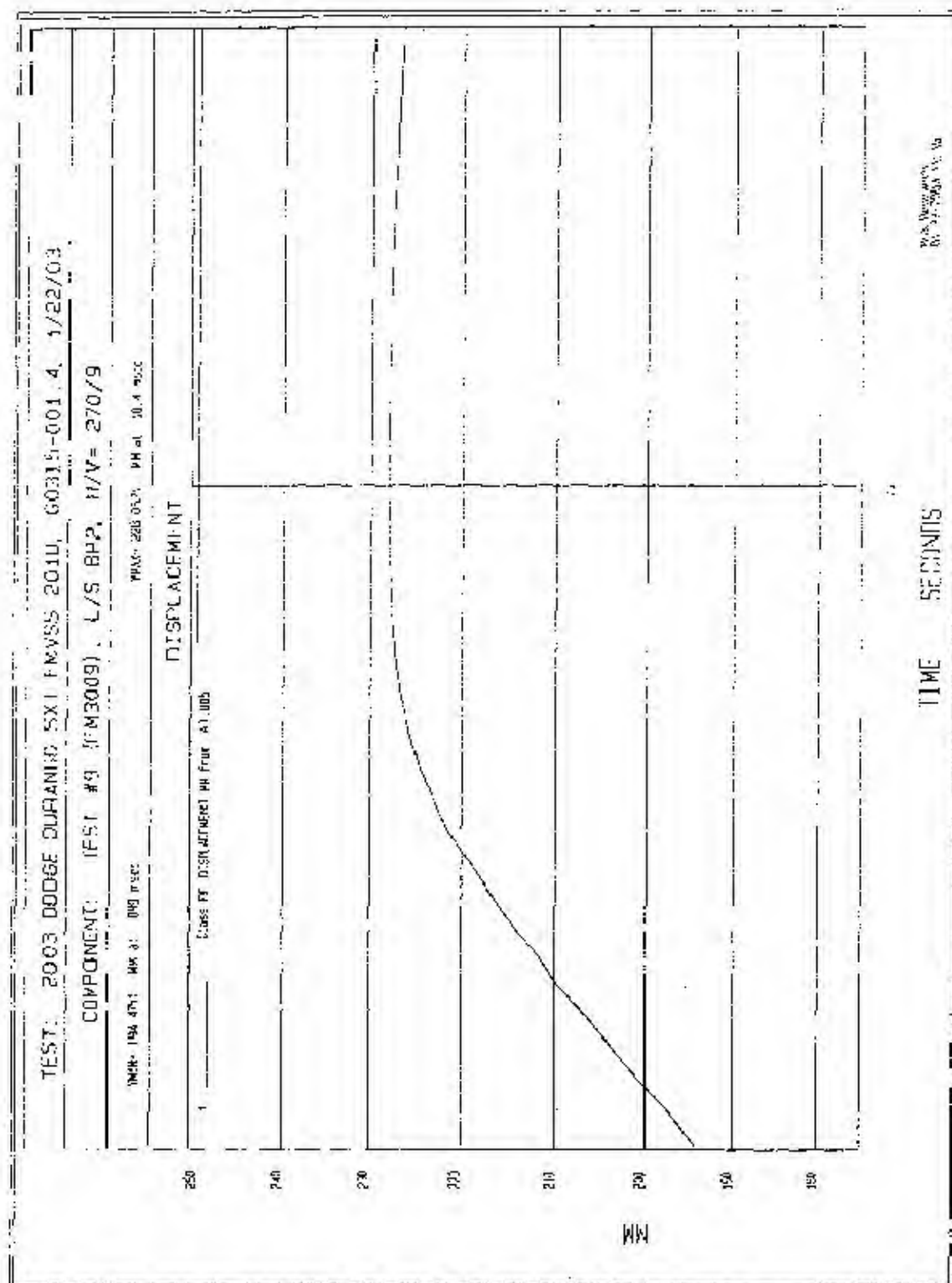
COMPONENT: TEST #9 (FM3009), L/S BPP, H/V= 270/9

HEAD X as a function of DISPLACEMENT



WVA 1000000000  
01/23/2003 11:17







TEST: 2003 OODGE DURANGO SXT FMVSS 201J, E0315-001 A, 1/22/03

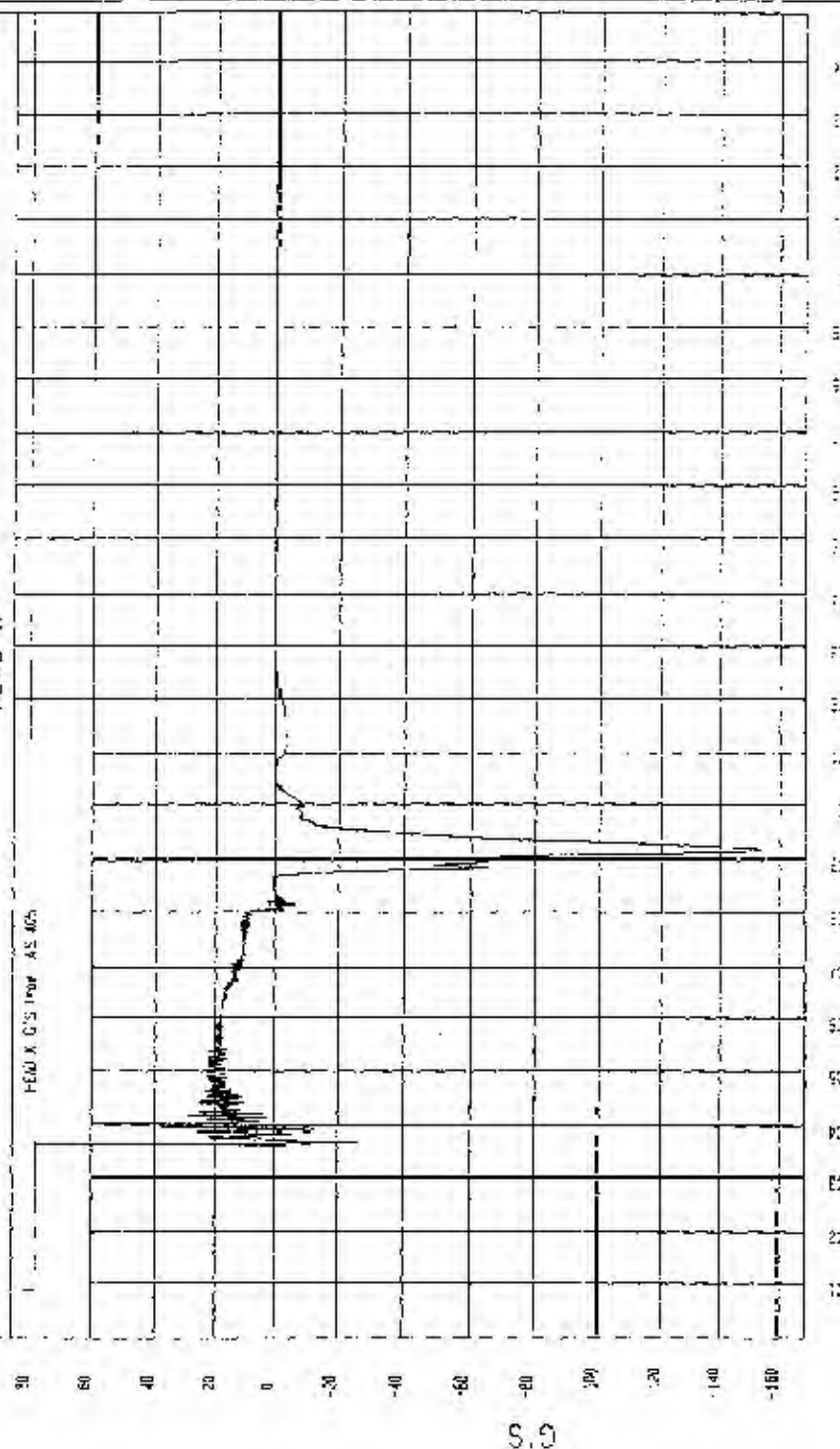
COMPONENT: TEST #9 (FM300G), L/S BP2, H/V= 270/S

MIN=153.7667 6.5 at 91.6 msec

MAX=17.9125 3.75 at 16.6 msec

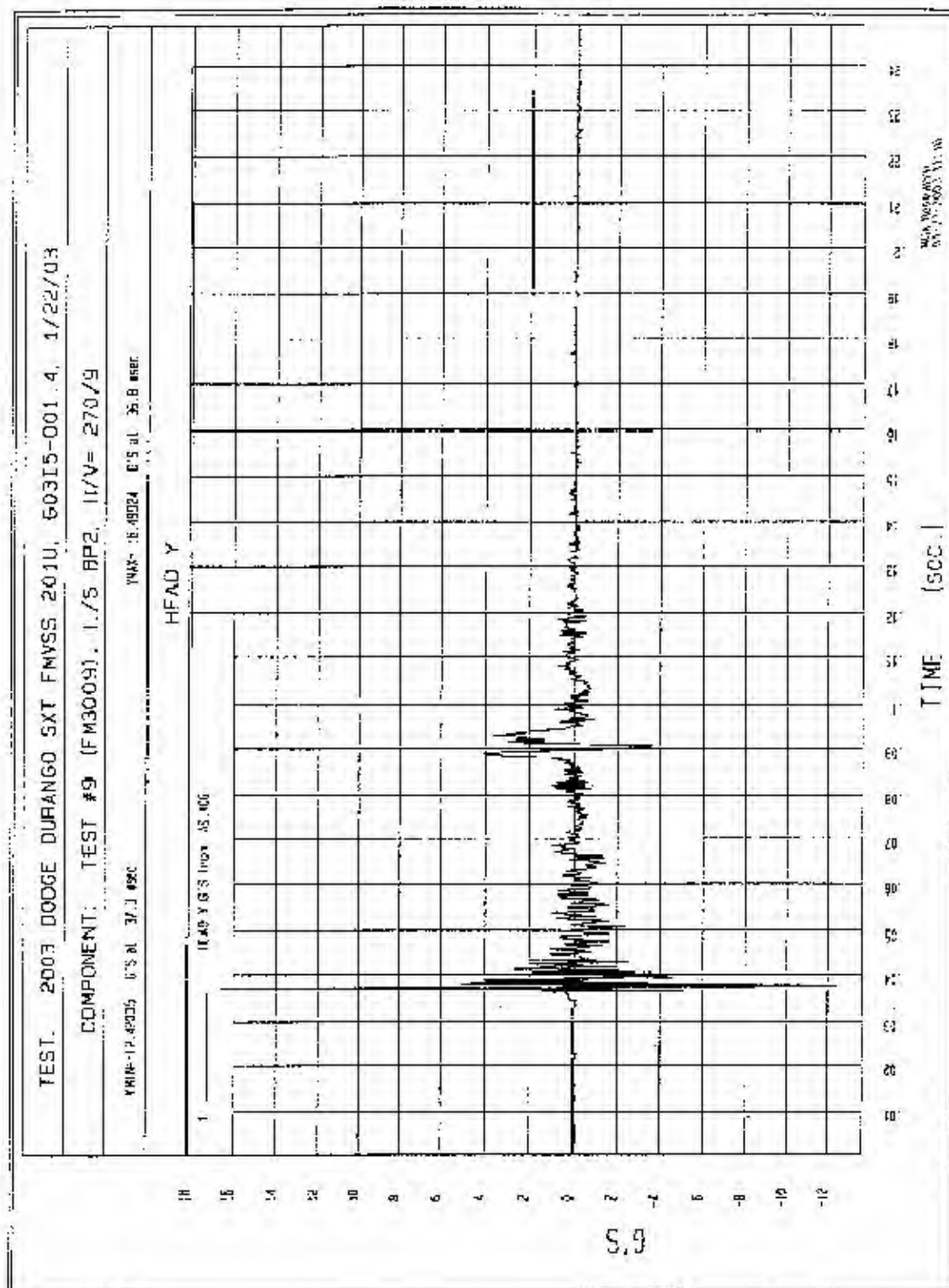
HEAD X

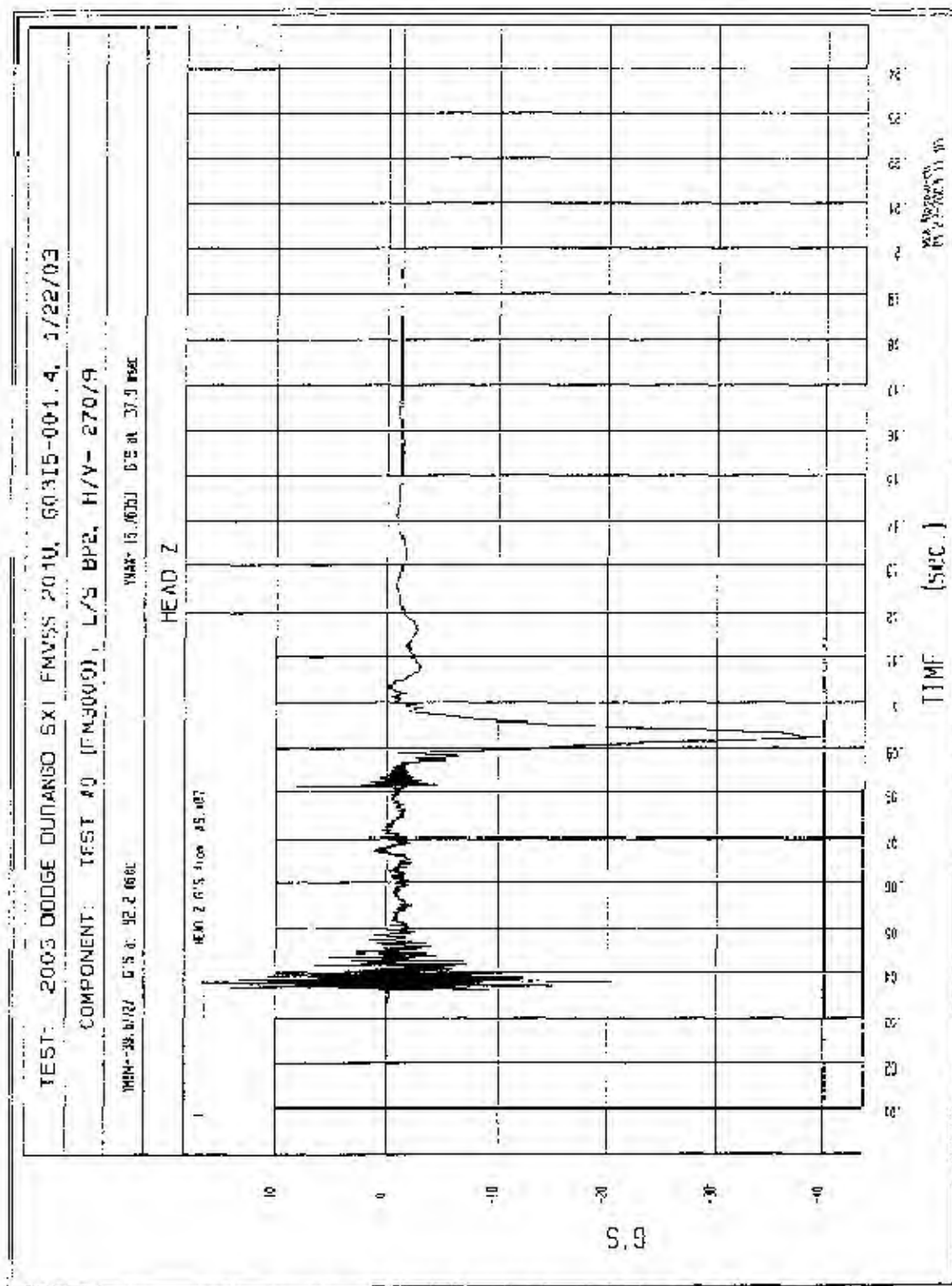
HEAD X G'S 1000 AS MS

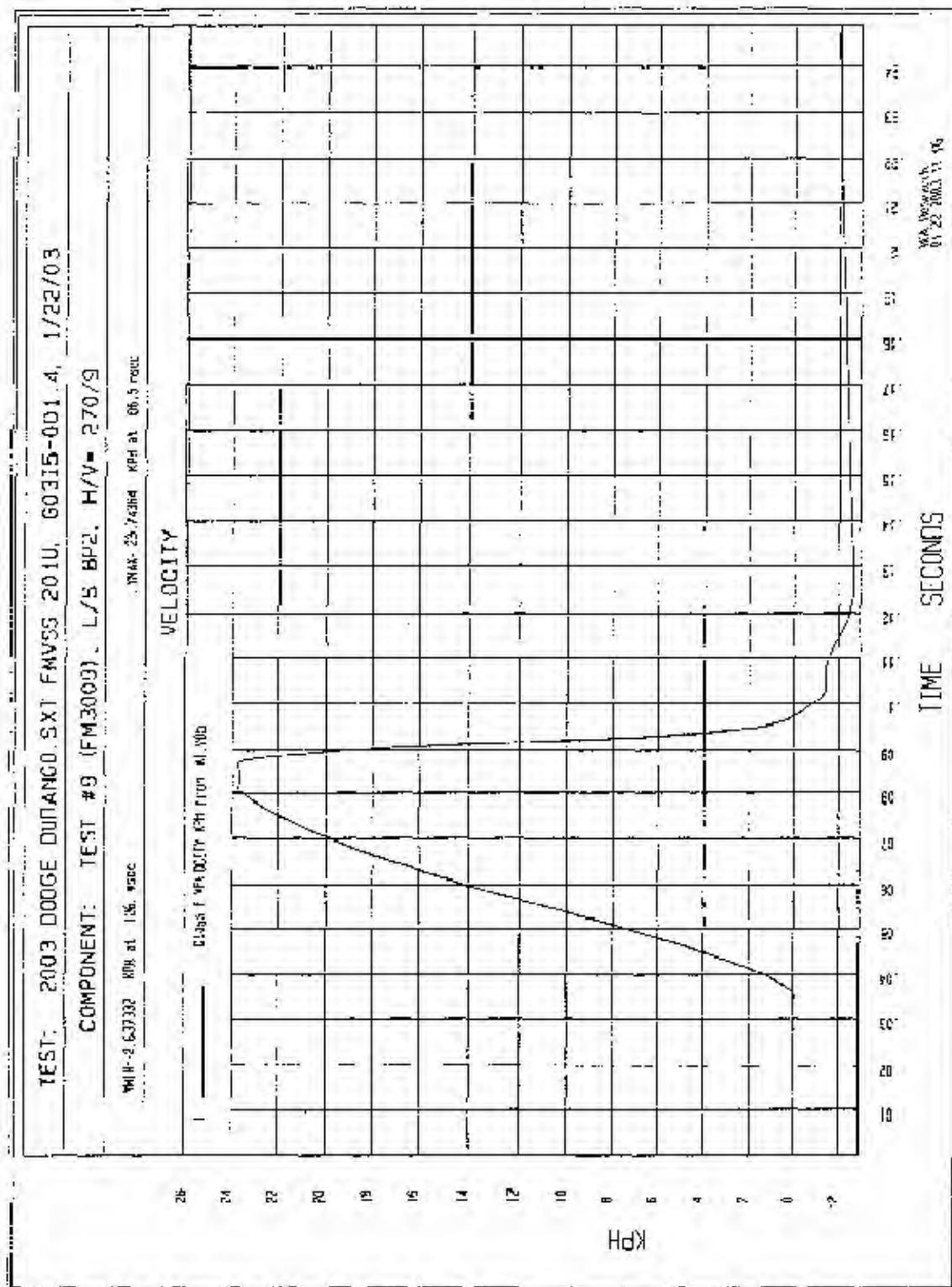


DATA REPORTED  
ON 11/28/03 11:45

TIME (SEC.)







MGA RESEARCH CORP.  
FAXS 7011 TASTING  
2001 DODGE D3 RANGI  
SXT 4-0001103

CH 008 162103  
TEST 01 0001103  
(201000) 11/11/11  
PRO-TEST



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/21/03

TEST #4

RIGHT BP3

(FM3004)

H/Y = 87/2

POST-TEST

MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305                      1/21/03  
TEST #4                    RIGHT BP3  
(FM3004)                  H/V = 87/-2

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/02  
SUPERCEDES: MGATP201U\_FRAME #23

DOC NO: MGATP201U\_FRAME #2  
REVISION NO: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: 6055-1001 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

#### GENERAL TEST PARAMETERS:

Test Number: 4

Target (Vehicle Side): Left Front: BP3

Temperature: 22 °C

MGA Test Reference No.: FM3004

Humidity: 22 %

Approach Angles: Horizontal 87 °

Time of Test: 2:47 am PT

Vertical -2 °

FMH Serial No: 35

#### TEST RESULTS:

HIC(d)	HIC	At (msec)	Velocity (km/h)	Impact location on FMH (mm)	
				Above Ft. O	Left/Right Pt. O
<u>510</u>	<u>456</u>	<u>11.3</u>	<u>23.8</u>	<u>14</u>	<u>1</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
<u>X</u>	<u>5</u>	<u>J35924</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35919</u>	<u>95.3</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35051</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test damage, non-compliance, invalid test, etc.):

No Visible Damage

Recorded By: [Signature] Approved By\*: [Signature] Date: 10/21/03

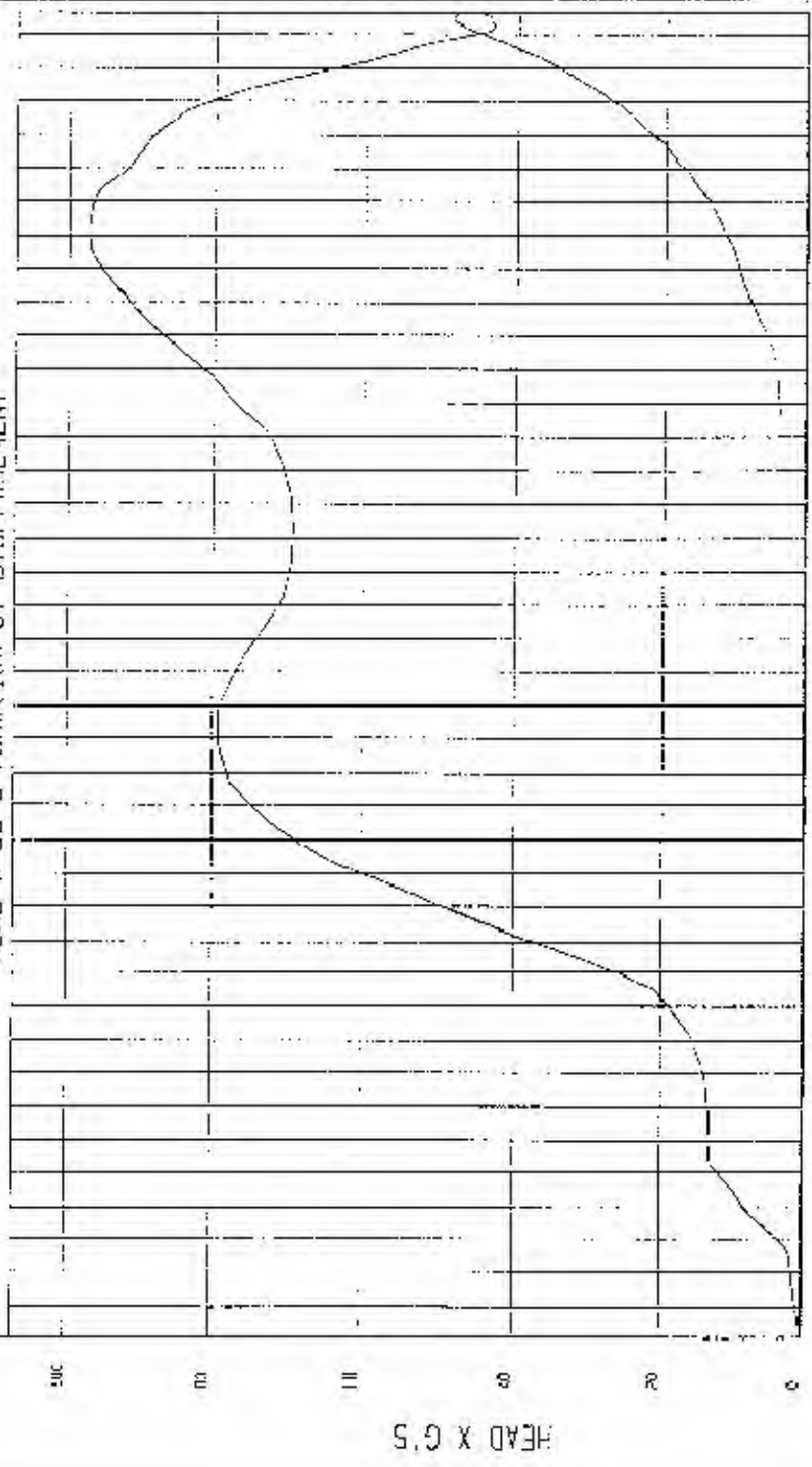
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NETSA\FM3004AV.A05
The HIC = 455.84 calculated over 11.3 msec
T1 = 1.89 msec T2 = 13.15 msec
*****
HIC(d) = 510
Impact Velocity = 23.8 (kph)
```

1FS1 2003 30066 CURRANGO SXT FMVSS 2010, 60315-001.4, 1/21/C3

COMPONENT: TEST #4 (FM3034), H/S BP3, H/V - E77-2

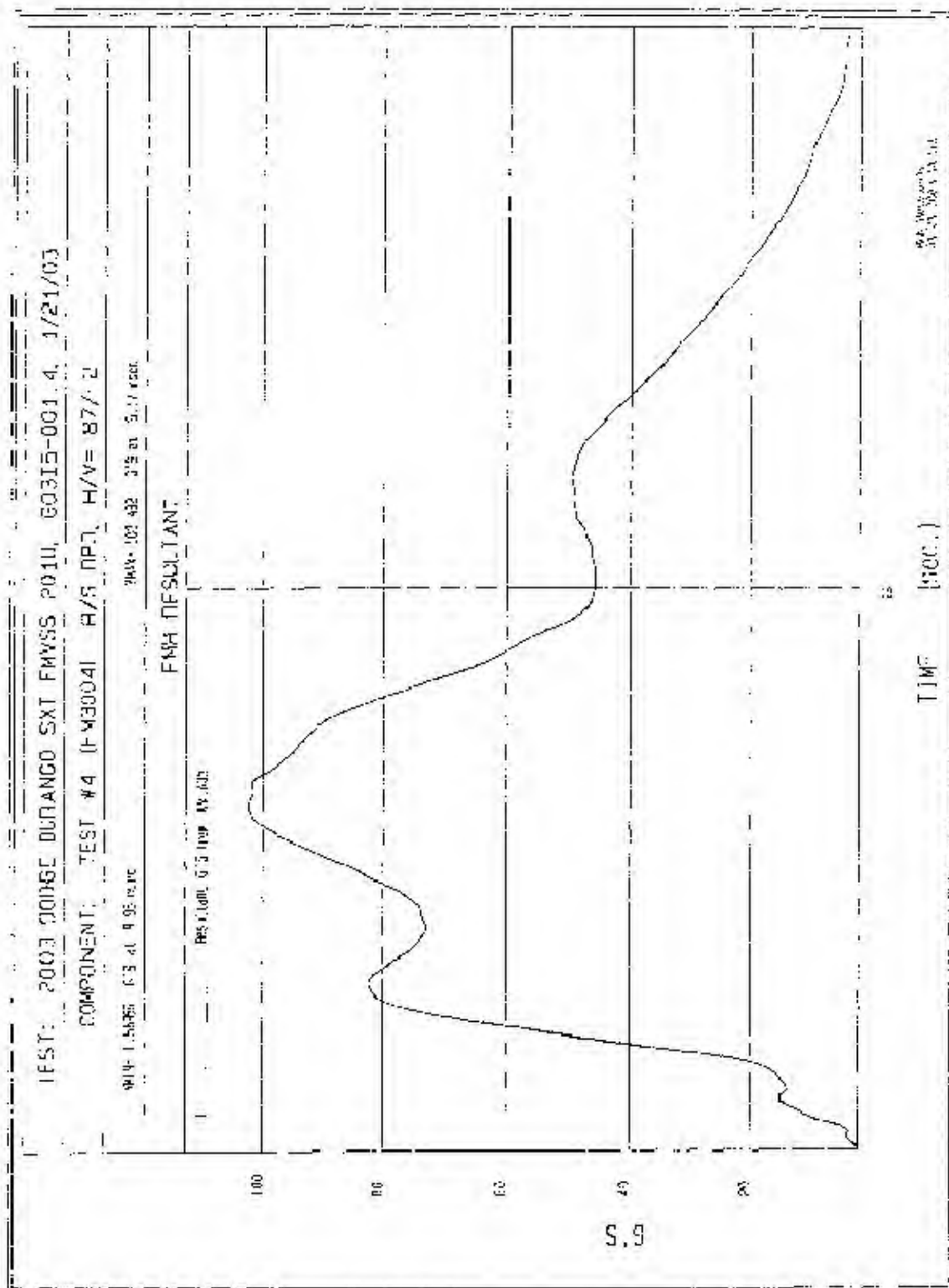
ICAD X as a function of DISPLACEMENT



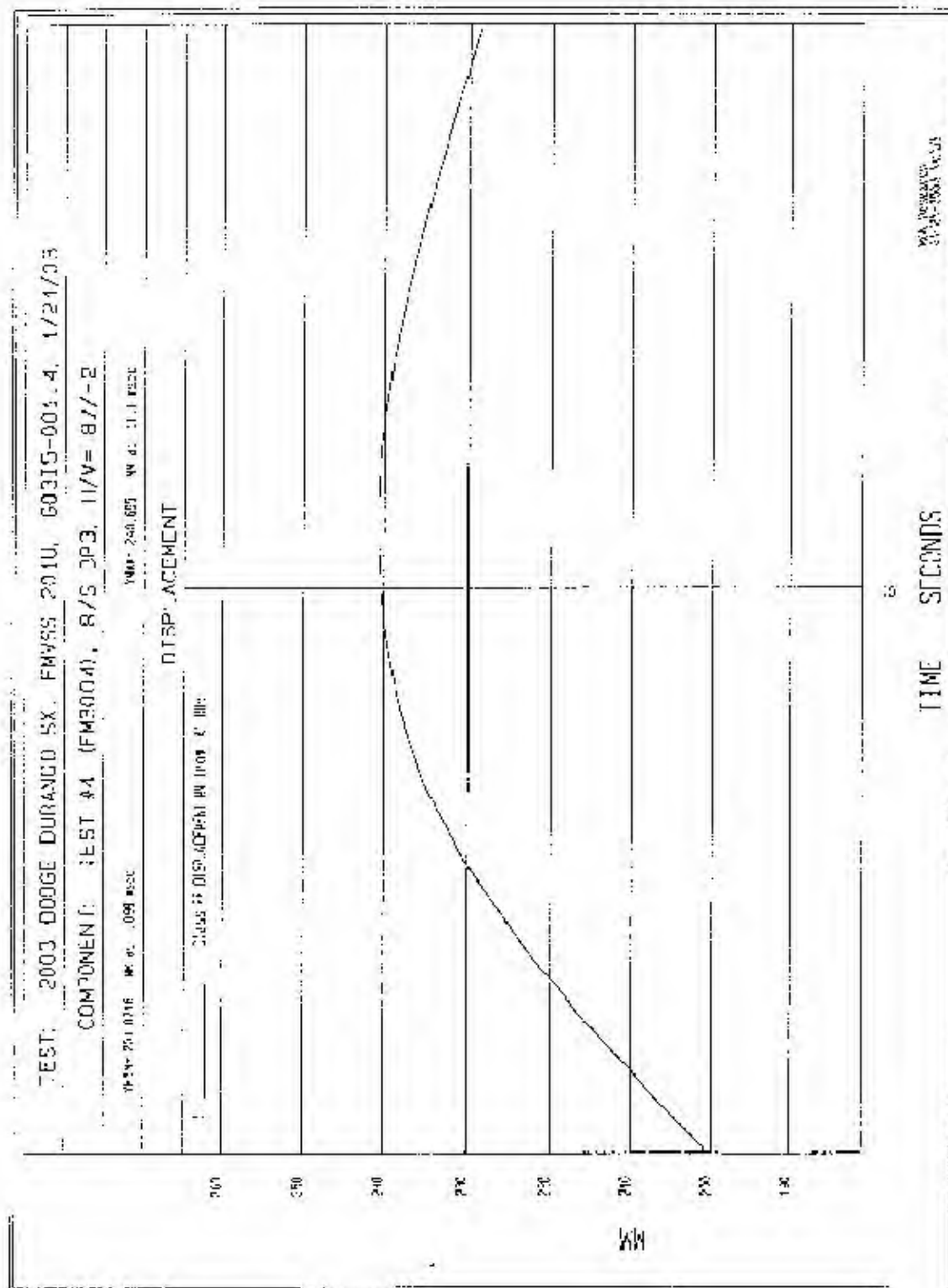
DISPLACEMENT MM

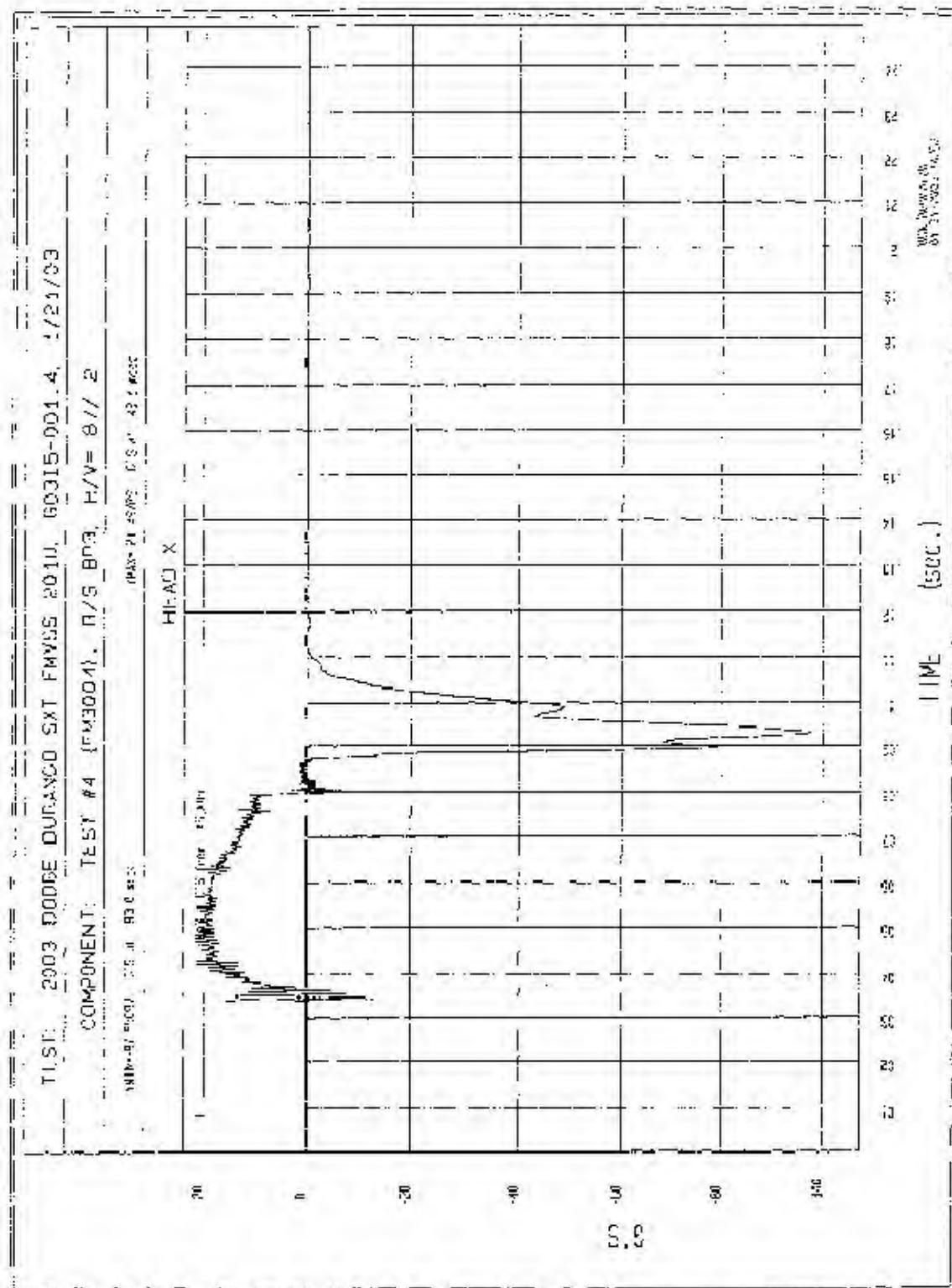
WEEK 04/00/00  
BY 11/00/00

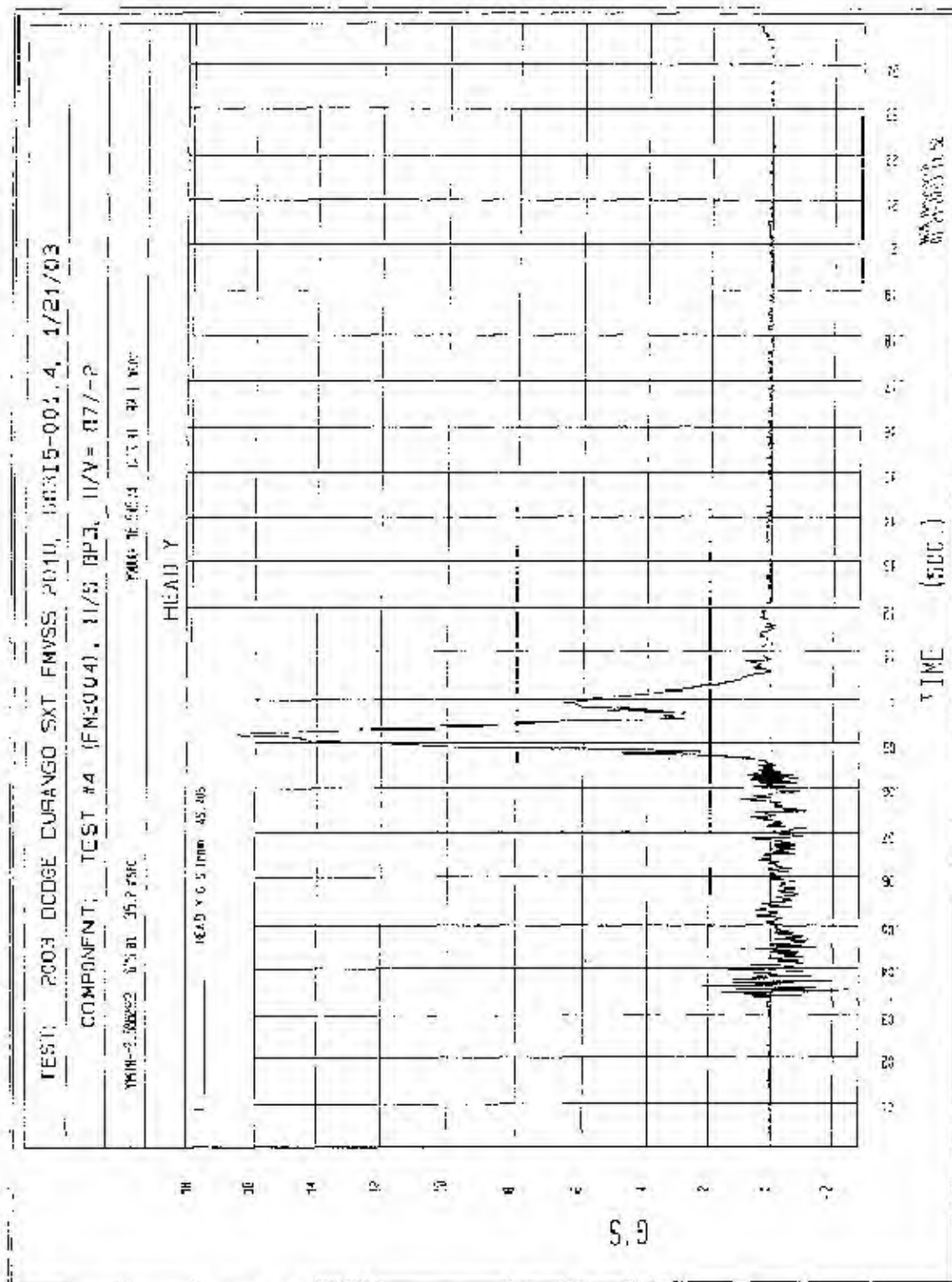


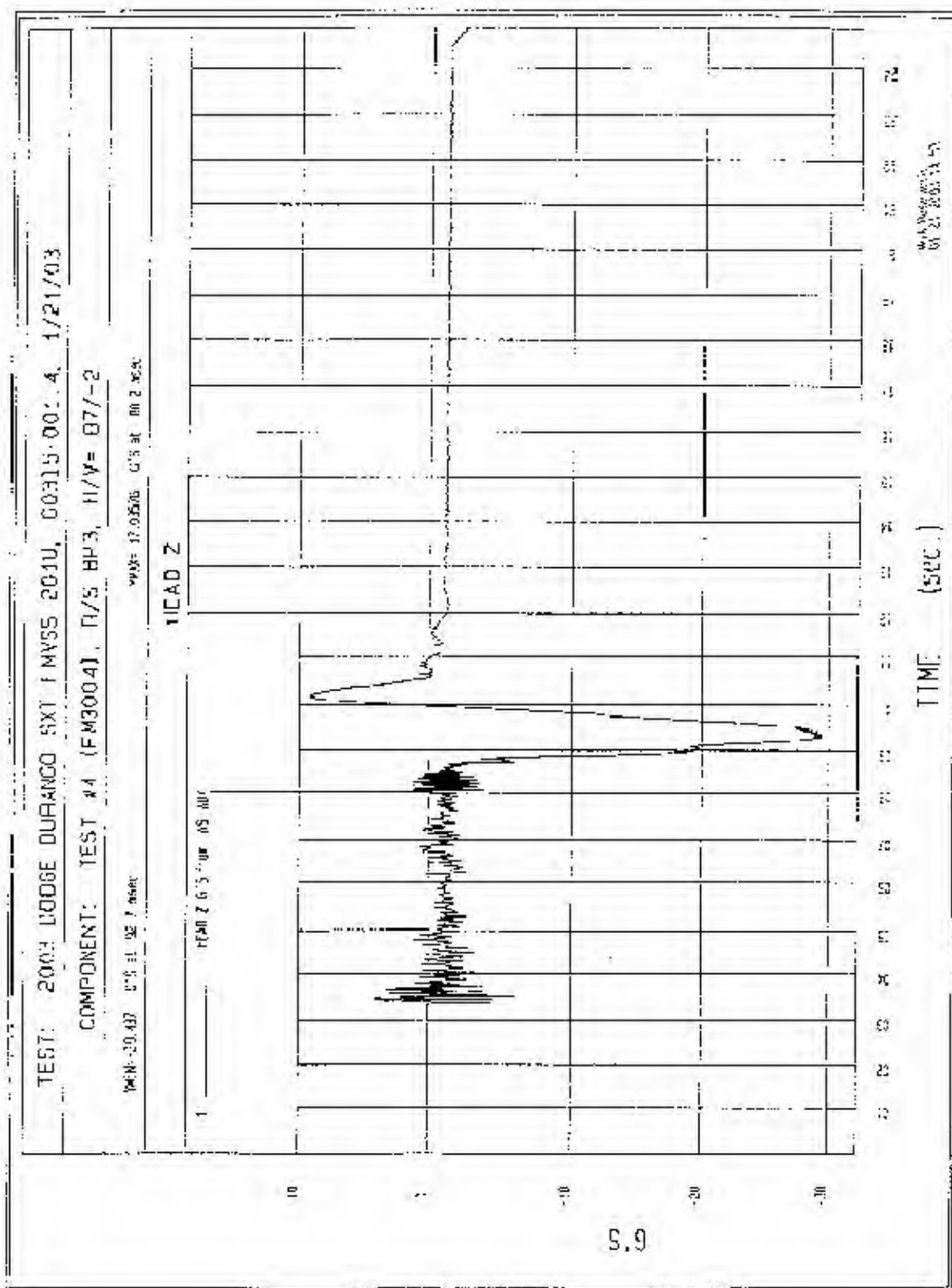


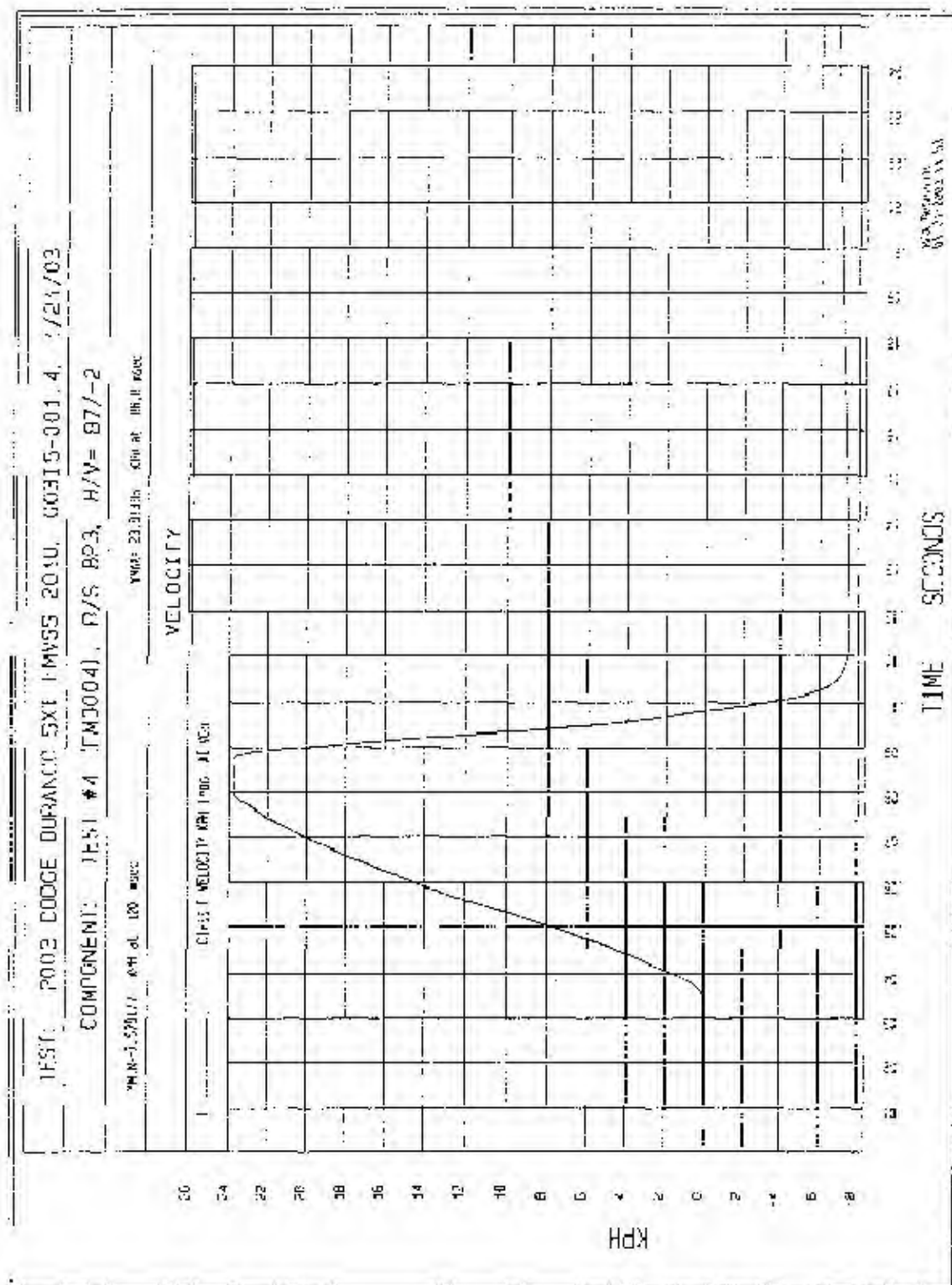












MGA RESEARCH CORP  
EMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/21/03

TEST #6

RIGHT OPI

(FM3006)

H/V = 90/15

PRE-TEST



MGA RESEARCH CORP  
FMVSS 2011 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305                      1/21/03  
TEST #6                  RIGHT OP1  
(FM3006)                  HV = 90/15

POST-TEST

MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305  
TEST #6  
(FM3006)

1/21/03  
RIGHT OP1  
IL/V = 90/15

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES: MGATP201U\_FRAME #13

DOC. NO: MGATP201U\_FRAME #2  
REVISION NO: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO C30365 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

#### GENERAL TEST PARAMETERS:

Test Number: 6

Target: (Vehicle Side): left CP1

Temperature: 22 °F FEQ

MGA Test Reference No.: FM3006

Humidity: 22 %

Approach Angles: Horizontal 90 °

Time of Test: 4:45 am/pm am

Vertical 15 °

FMV Serial No: 38

#### TEST RESULTS:

HIC(d)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMV (mm)	
				Above Pt. O	Left/Right Pt. O
<u>550</u>	<u>509</u>	<u>7.9</u>	<u>230</u>	<u>4</u>	<u>1</u>

#### INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No	D.R. Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
<u>X</u>	<u>5</u>	<u>J36197</u>	<u>-100.2</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J36193</u>	<u>102.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J36353</u>	<u>97.8</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test damage, non-compliance, invalid test, etc.): \_\_\_\_\_

No VISIBLE DAMAGE-

Recorded By: [Signature] Approved By\*: [Signature] Date: 11/21/03

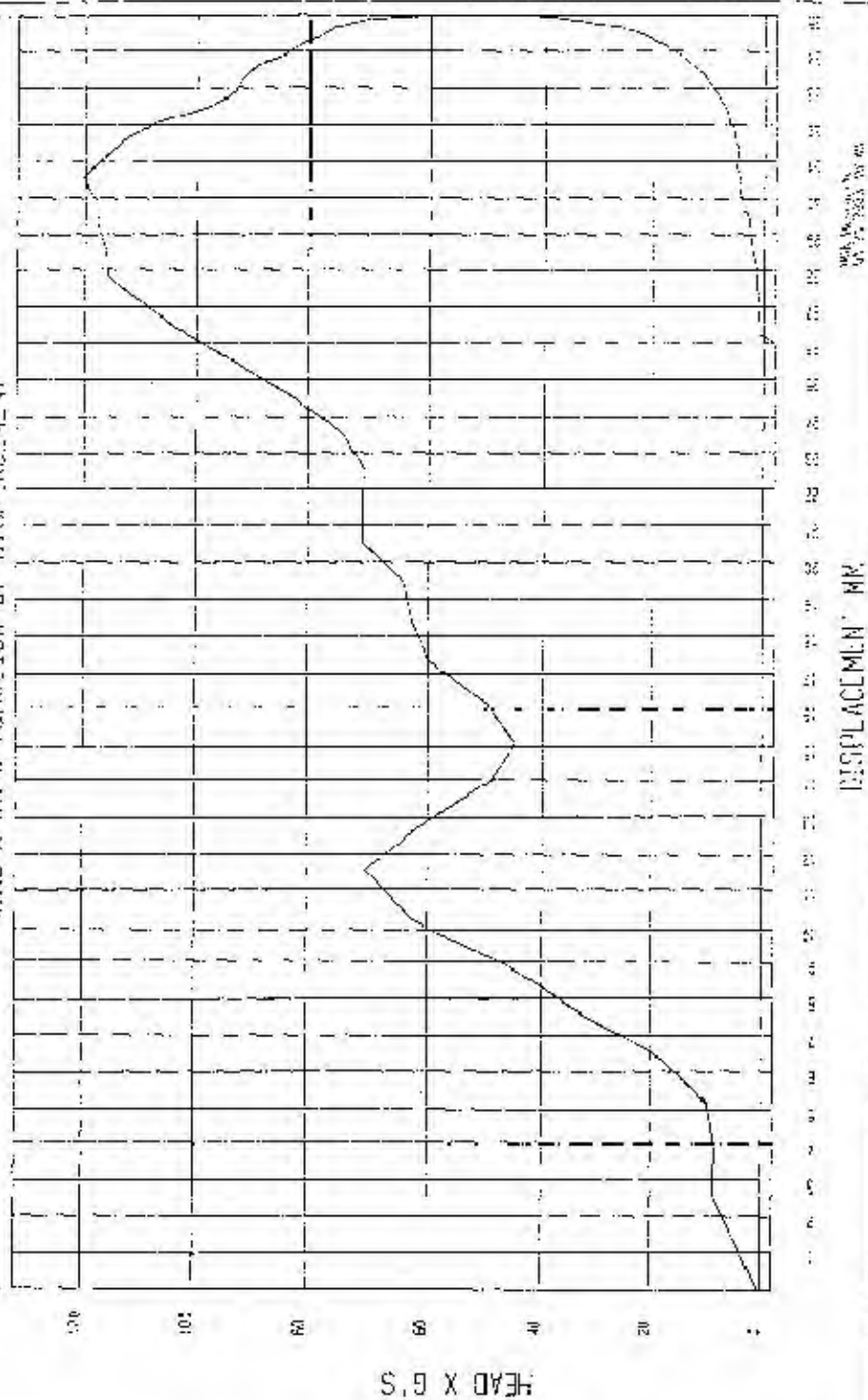
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHISA\FM3006AV.AC5
HIC = 508.64 calculated over 7.9 msec
T1 = 1.39 msec T2 = 9.26 msec
*****
HIC(d) = 550
Impact Velocity = 23.6 (kph)
```

TEST: P003 (UNGL DURANGO SXT = MVSS 2010, G0HIS-001.4, 1/21/03)

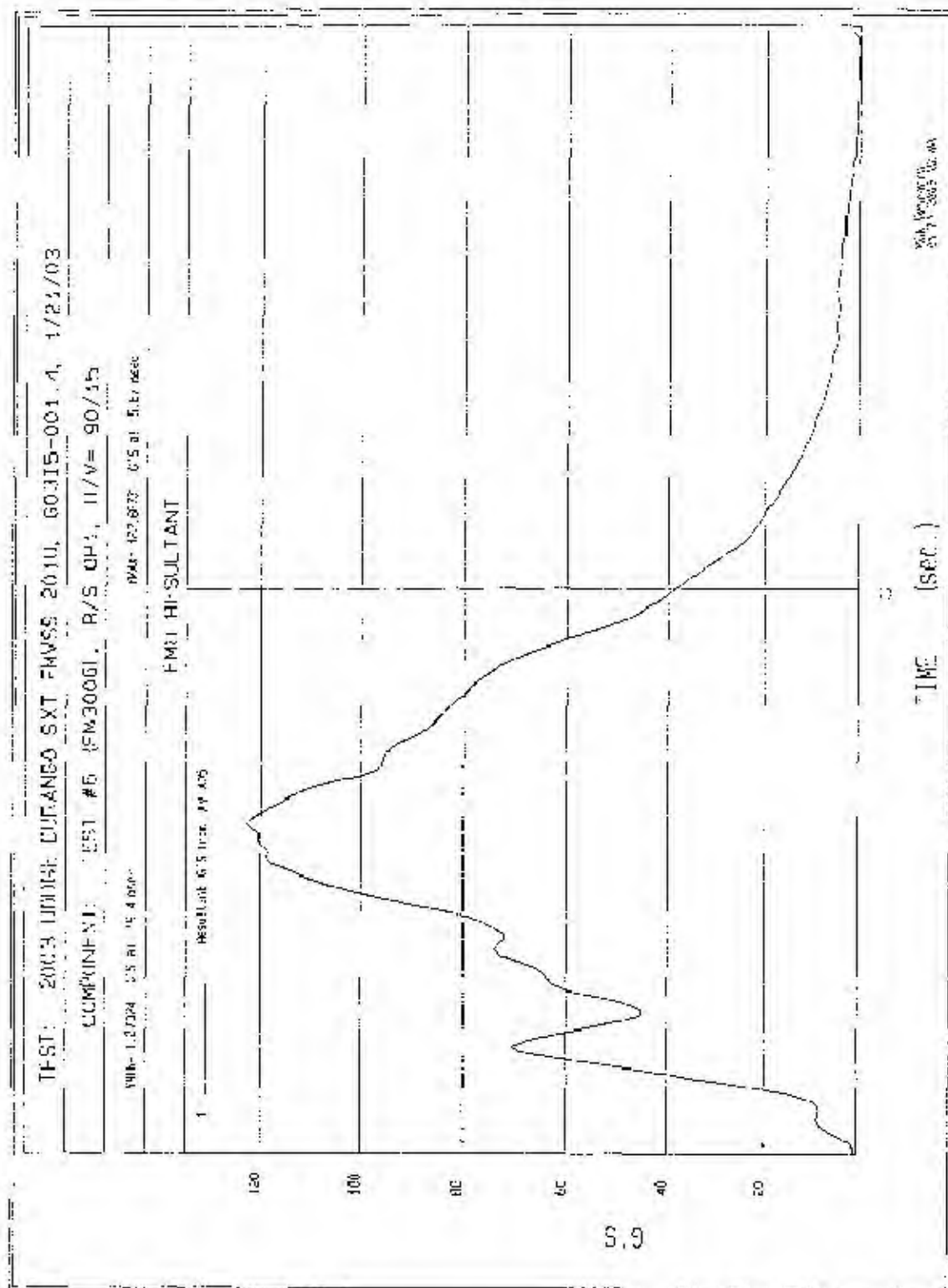
COMPONENT: 1F51 #6 (M200E), P/S UP1, 1/V= 9C/15

HEAD X as a function of DISPLACEMENT



WEEK 10/20/03  
BY: 10/20/03

DISPLACEMENT MM





TEST: 2003 DDDCF DURANGO SXT FMVSS 2010 G0JIS-001 A, 1/21/03

COMPONENT: TEST #6 (FM3000), R/S DP1, H/V 50/15

YMIN= 132 3407 44 11 049 Repet

YMAX= 227 4026 44 41 9 36 Repet

# DISPLACEMENT

YMIN= 132 3407 44 11 049 Repet

YMAX= 227 4026 44 41 9 36 Repet

250

240

230

220

210

200

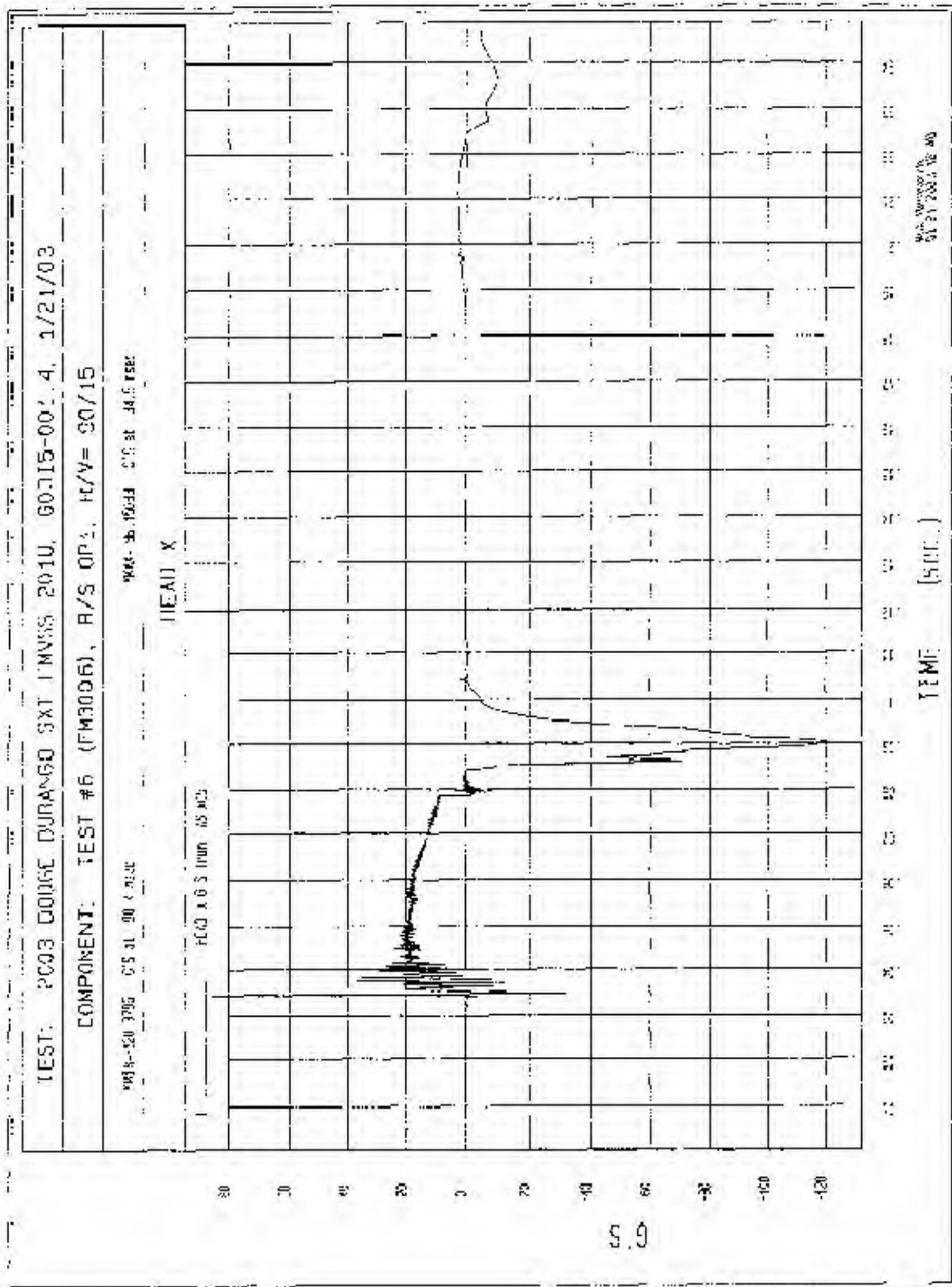
190

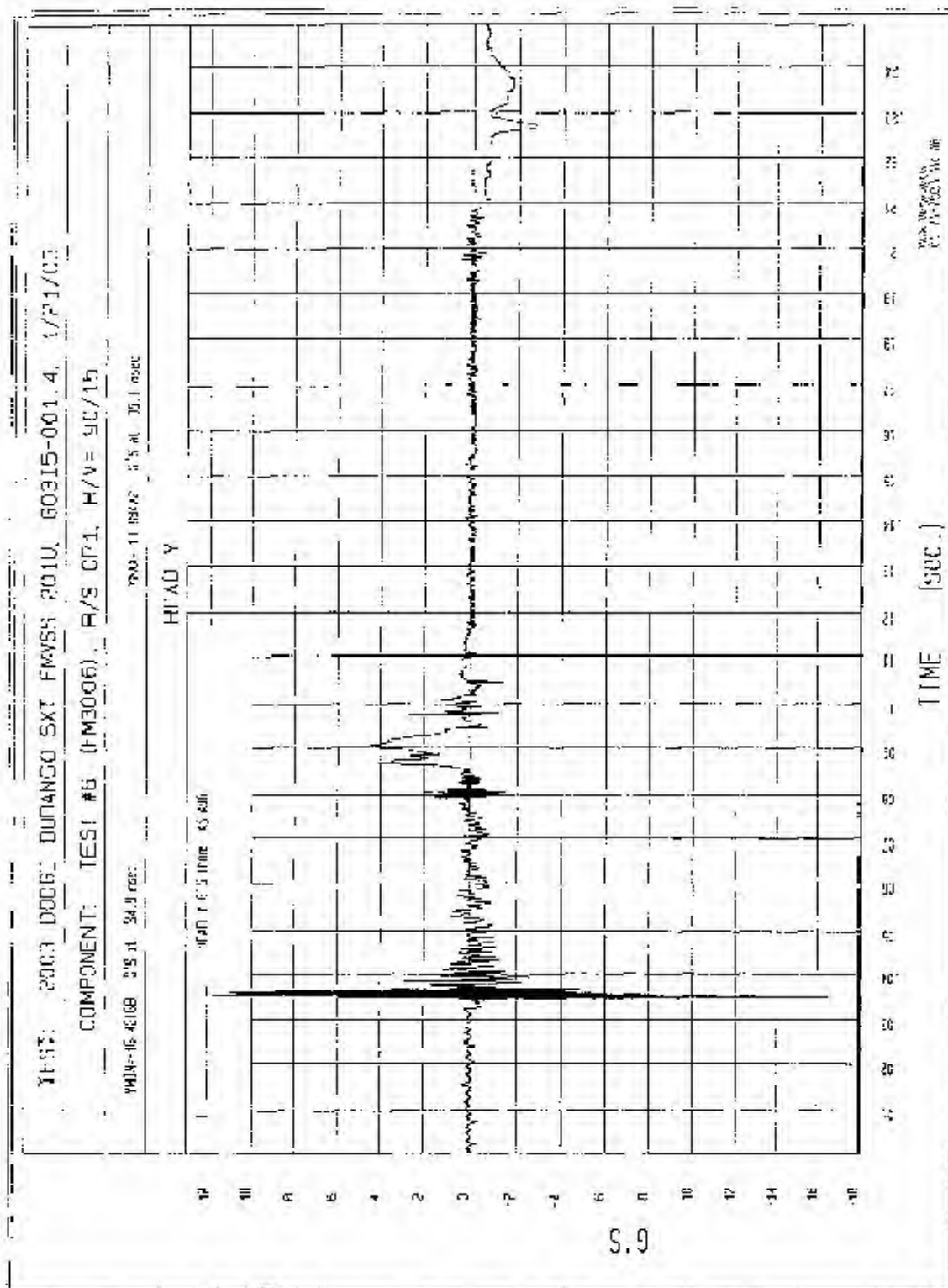
180

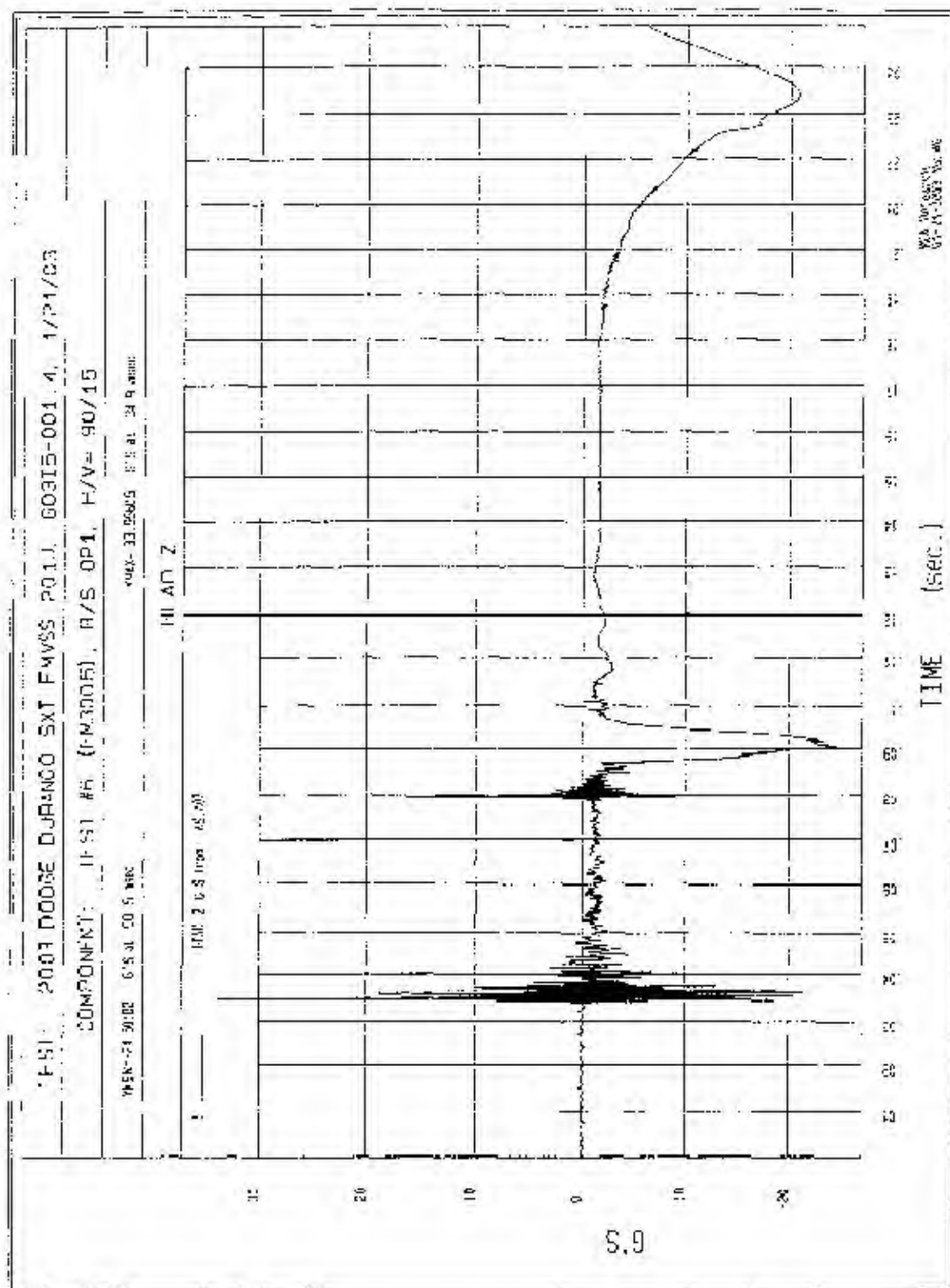
MM

DISPLACEMENT

DISPLACEMENT







TEST: 2003 DODGE DURANGO SXT FMVSS 2010, 60315 001.4, 1/24/03

COMPONENT: TEST #6 (FM300G), R/S OP1, H/V= 90/15

TIME= 6.51054 KPH at 249.000

TIME= 23.58000 MIN at 76.9 KPH

VELOCITY

1.000 RECTIFY KPH at 90

26

24

22

20

18

16

14

12

10

8

6

4

2

0

-2

-4

-6

KPH

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

TIME SECONDS

0.000000 0.0

MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305                      1/21/03  
TEST #3                      RIGHT SRJ  
(FM3003)                      H/V @ 90/20

PRE-TEST



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305 1/21/03  
TEST #3 RIGHT SRI  
(FM3003) ILV = 90/28

POST-TEST

MGA RESEARCH CORP  
FMVSS 2010 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305 1/21/03  
TEST #3 RIGHT SRI  
(FM3003) II/V = 90/28

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/13/01  
SUPERCEDES MGATP201U\_FRAME #13

DOC. NO.: MGATP201U\_FRAME#2  
REVISION NO.: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: 3033 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durand

#### GENERAL TEST PARAMETERS:

Test Number: 3

Target (Vehicle Side): Left SL-1

Temperature: 25 °F

MGA Test Reference No.: FM3003

Humidity: 22 %

Approach Angles: Horizontal 90 °

Time of Test: 1:40 am/pm

Vertical 28 °

FMH Serial No: 38

#### TEST RESULTS:

HIC(d)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
423	310	8.8	237	14	4

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
X	5	J36157	-103.2	1.21	1.21
Y	6	J36152	102.0	1.23	1.23
Z	7	J36353	97.8	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By\*: [Signature] Date: 11/6/05

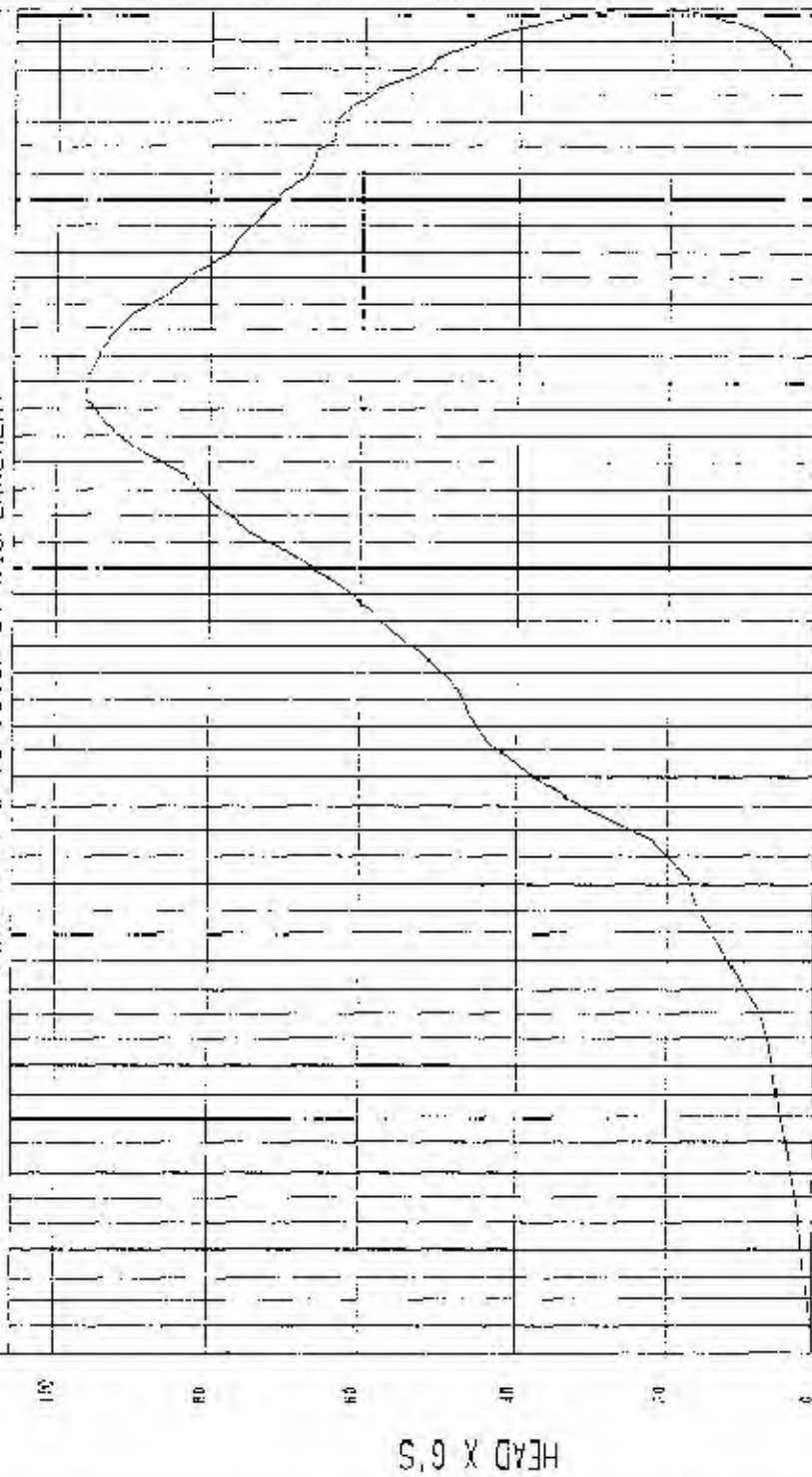
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
input file is \KHTSA\FM3003AV.AGE
HIC = 339.74 calculated over 6.8 msec
T1 = 3.49 msec T2 = 12.25 msec
*****
HIC(d) = 423
Impact Velocity = 23.7 (kph)
```

TEST: 2003 DODGE DURANGO SXT FMYSS 2010, 60315-001.4, 1/21/03

COMPONENT: TEST #3 (FW3003), R/S SN1, H/V, 05/20

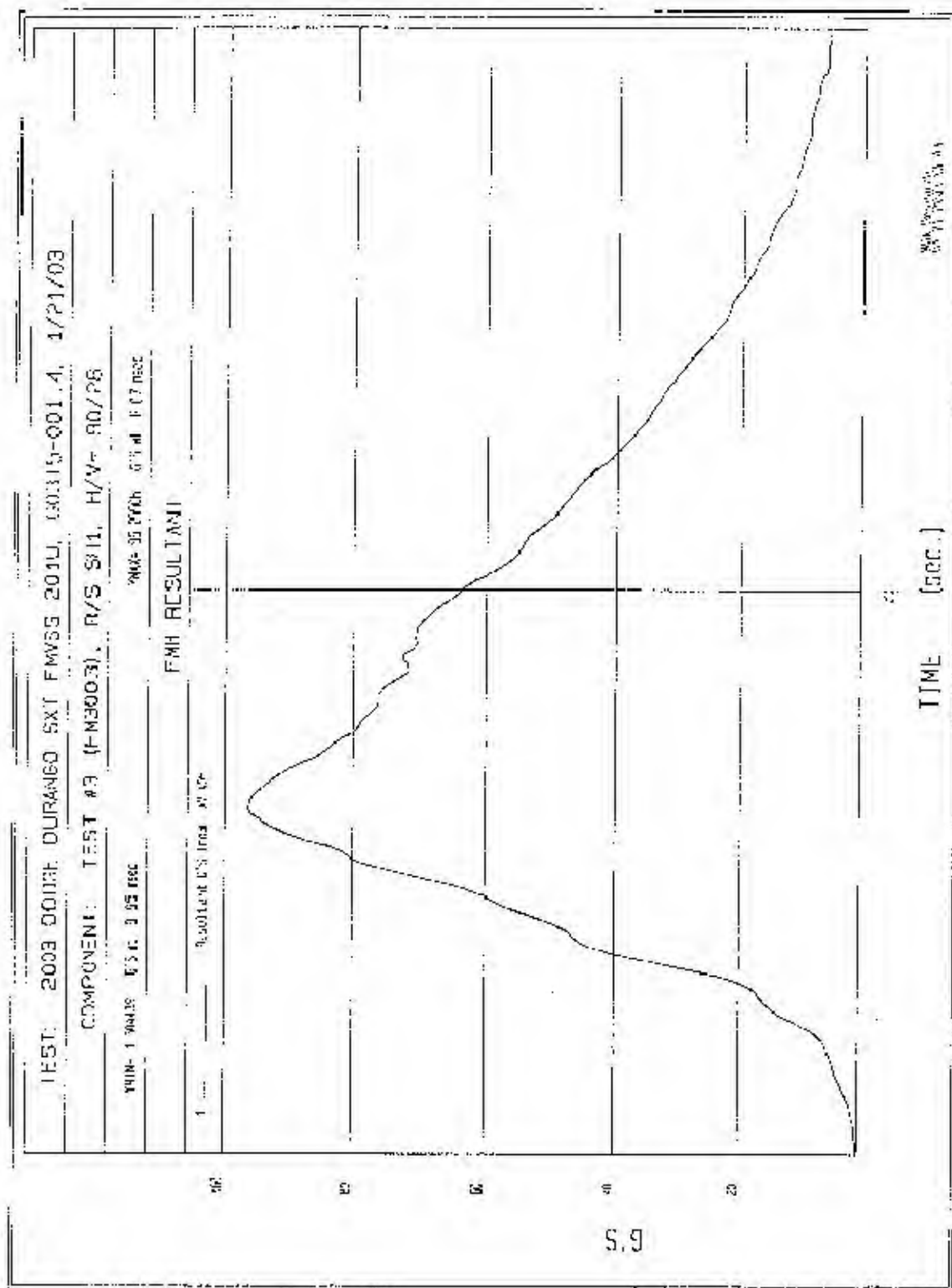
HEAD X as a function of DISPLACEMENT



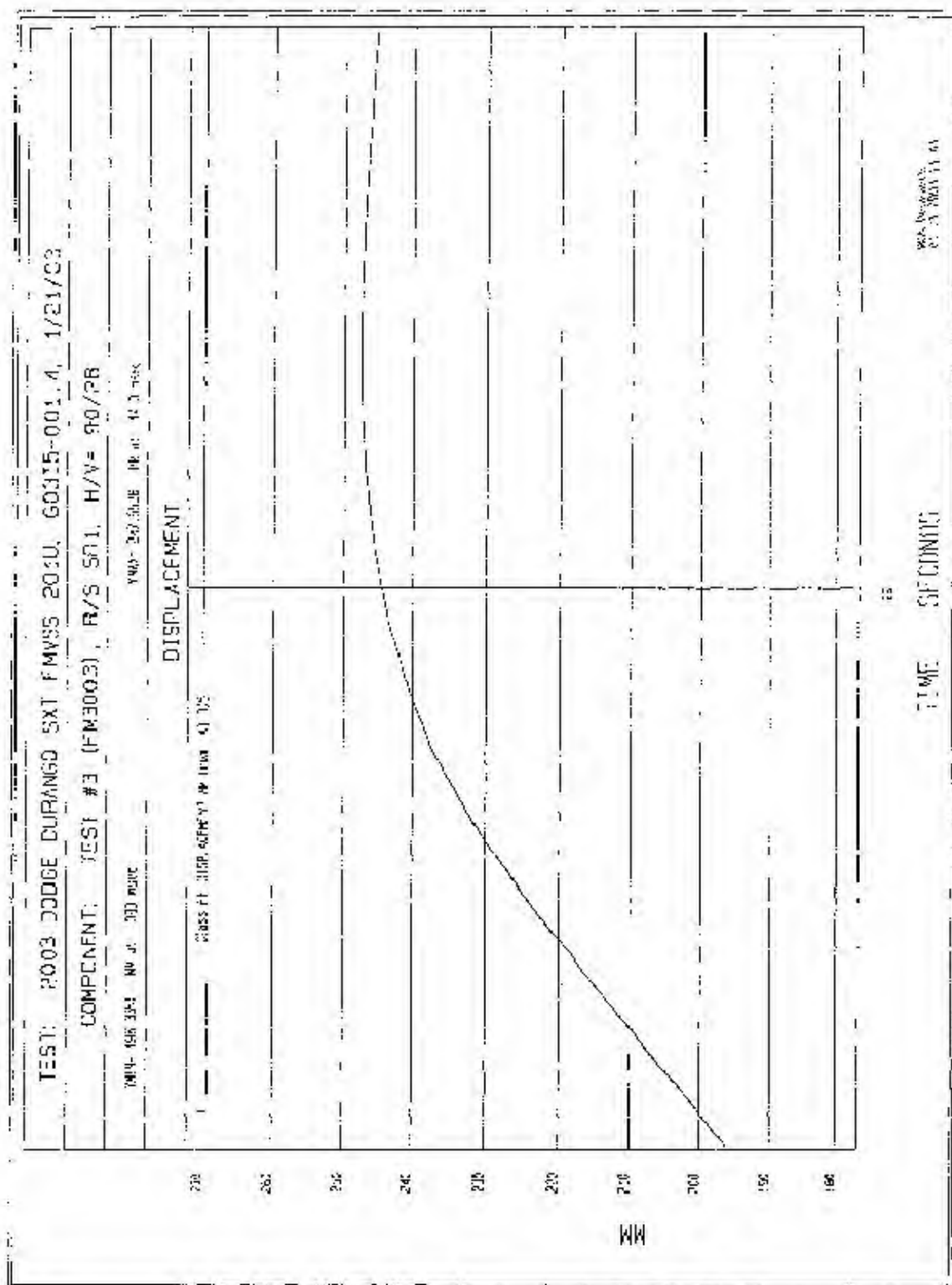
DISPLACEMENT MM

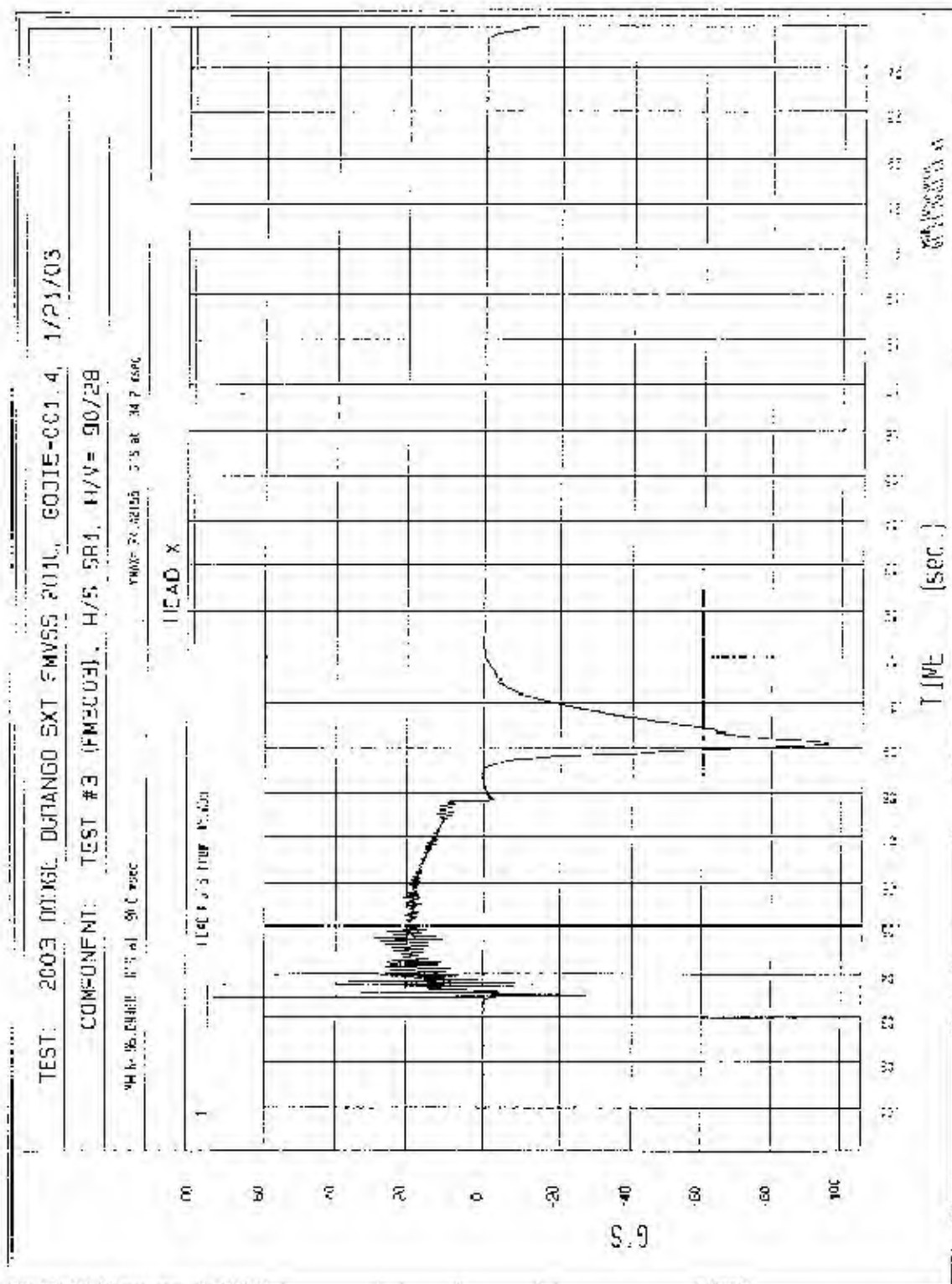
WMA 00000000  
01/21/03 11:10









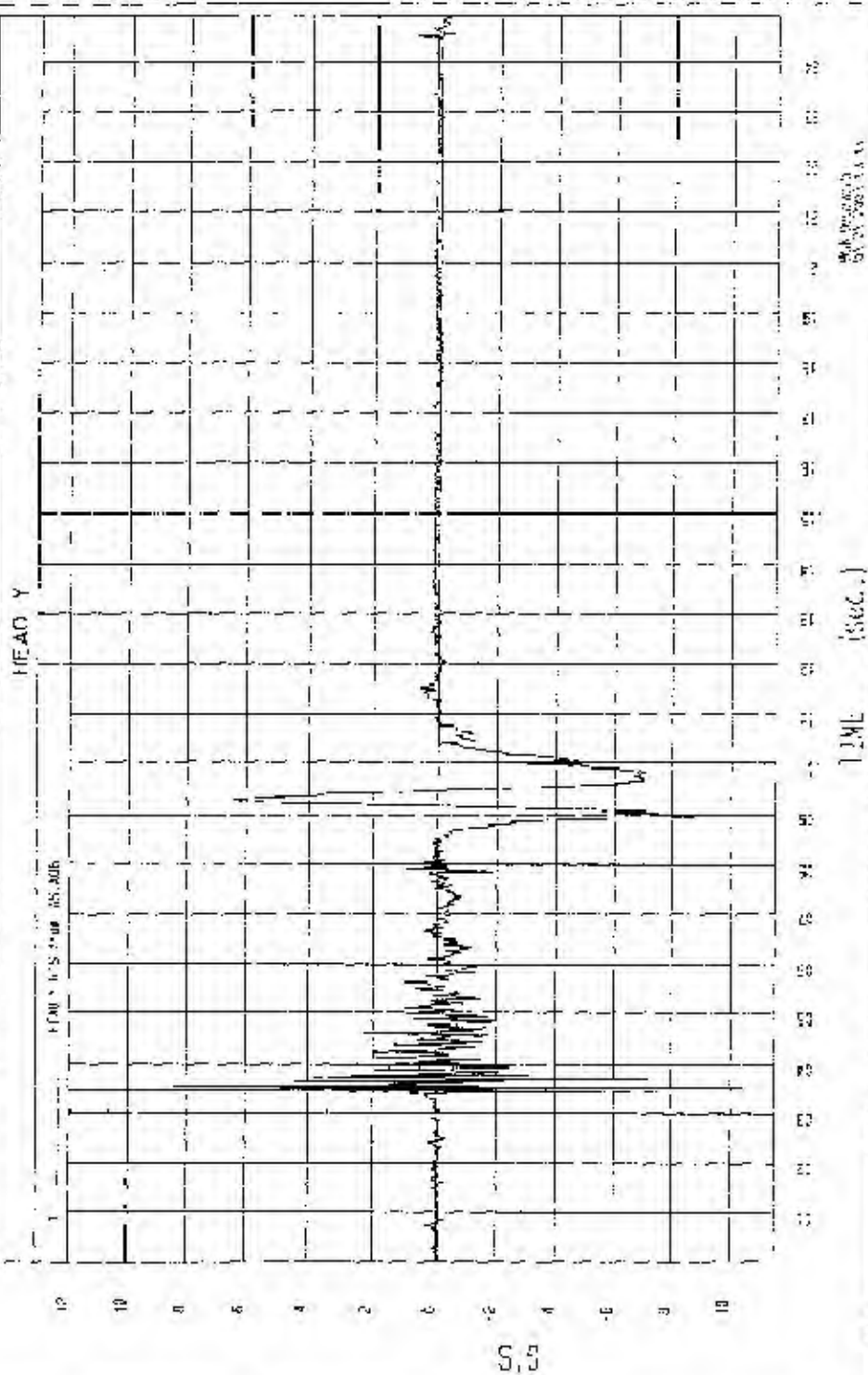


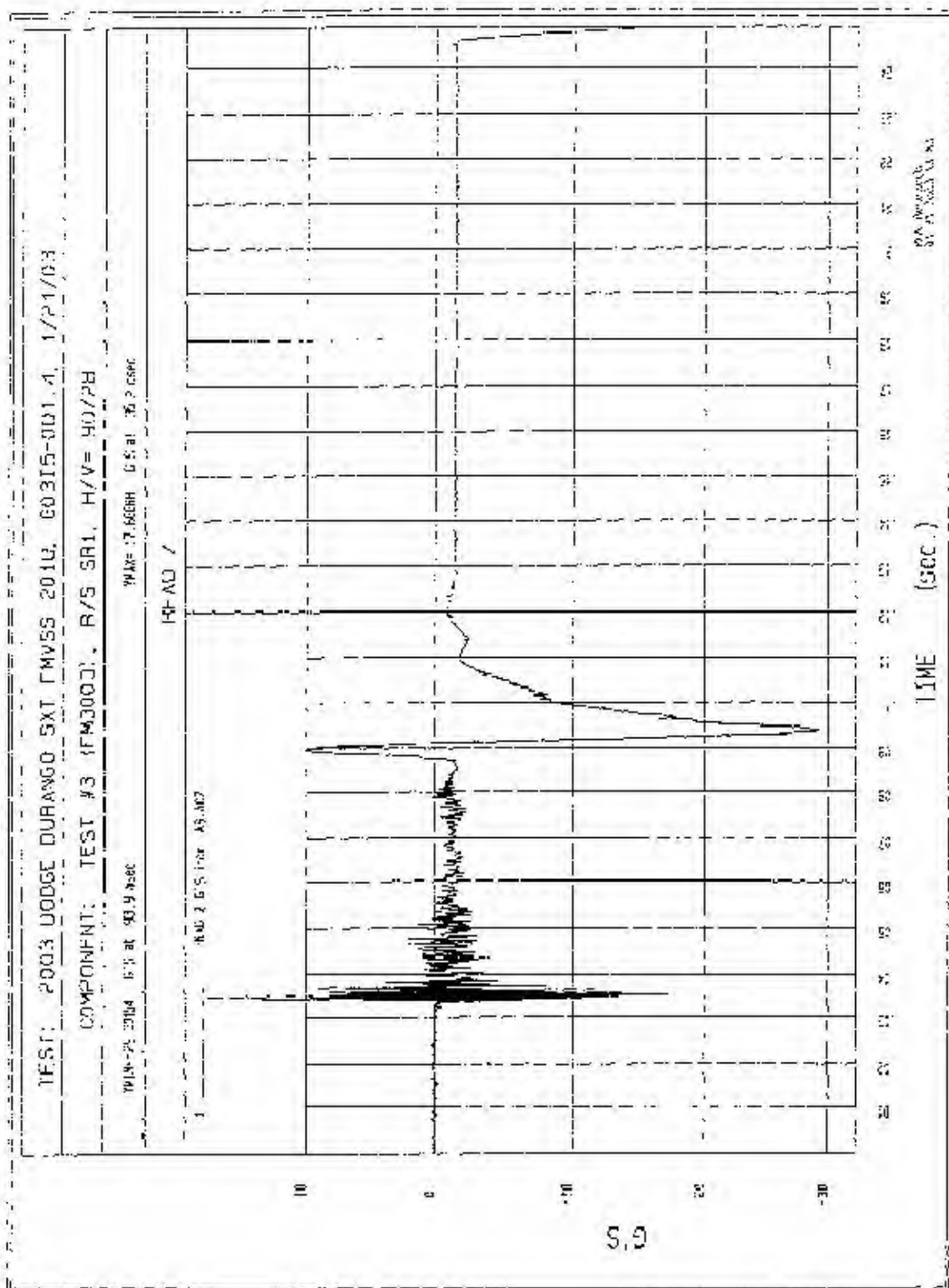
TEST: 2003 DODGE DURANGO SXT FMVSS 201U, DOT15-001.4, 1/21/03

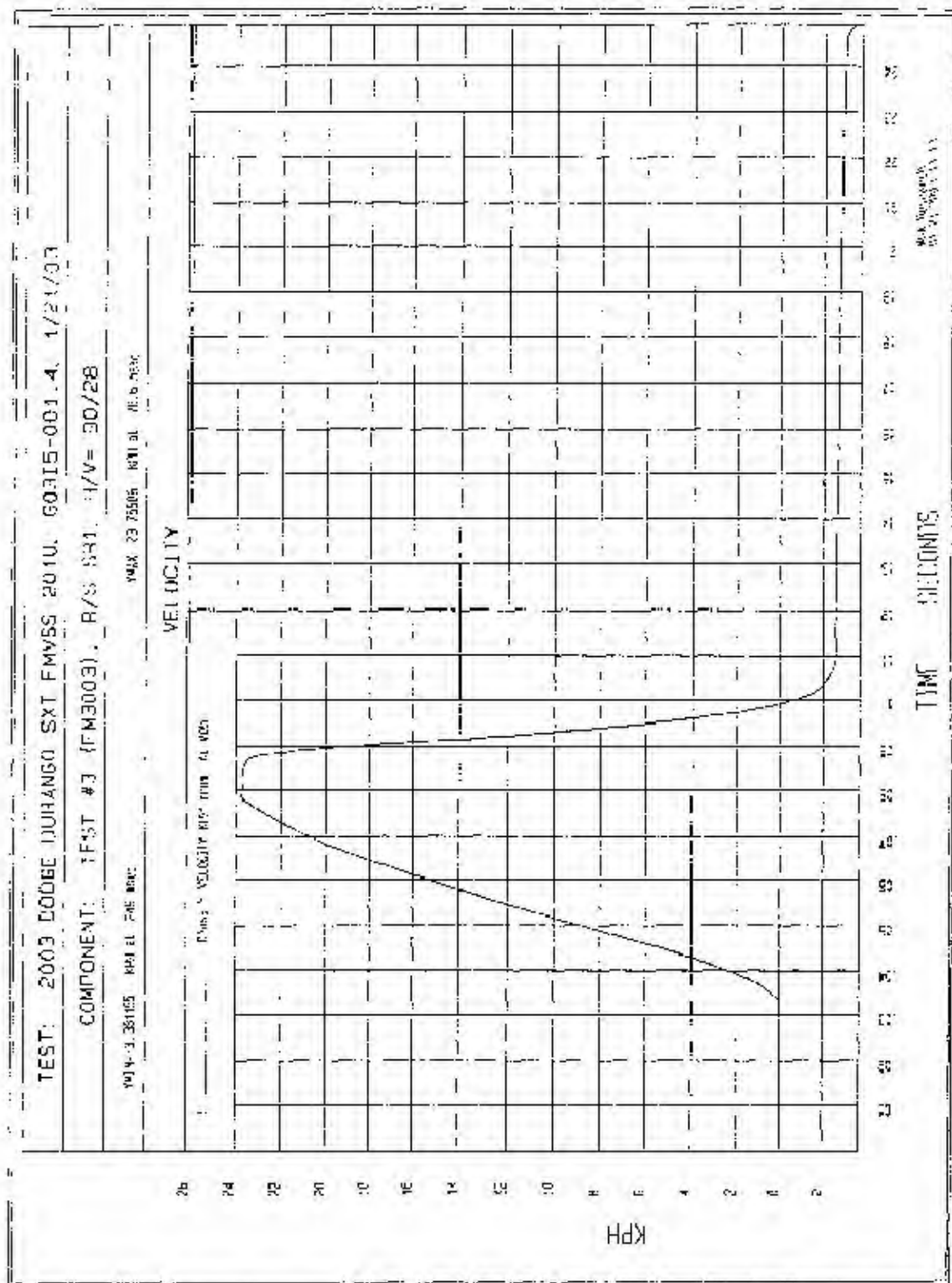
COMPONENT: TEST #3 (FMVSS201), R/S SR1, H/V= 90/20

W/B=10 4407s B'S AL 34.0 mg/c

W/B=11.94002 3'S AL 34.4 mg/c







MGA RESEARCH CORP  
FMVSS 2011 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305	1/22/03
TEST #8	LEFT URI
(FM3008)	H/V = 270/33



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305                      1/22/03  
TEST #8                  LEFT UR1  
(FM3008)              H/V = 270/33

POST-TEST

C30305  
FM3008  
LS UR1  
270/33

MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305

1/22/03

TEST #8

LEFT UR1

(FM3008)

H/V = 270/33

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10-18-01  
SUPERSEDES: MGATP2010\_FRAME #23

DOC. NO.: MGATP2010\_FRAME #2  
REVISION NO.: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 2010 TEST

JOB/NHTSA NO: 13085 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

#### GENERAL TEST PARAMETERS:

Test Number: 5

Target (Vehicle Side) Left URI

Temperature: -22 C/F

MGA Test Reference No.: FM300B

Humidity: 22 %

Approach Angles: Horizontal 270 °

Time of Test: 10:40 am

Vertical: 33 °

FMH Serial No: 36

#### TEST RESULTS:

HIC(d)	HIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	<u>Left</u> Right Pt. O
<u>432</u>	<u>415</u>	<u>10.2</u>	<u>23.9</u>	<u>37</u>	<u>5</u>

#### INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
<u>Y</u>	<u>5</u>	<u>J35923</u>	<u>-100.9</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35916</u>	<u>100.7</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35913</u>	<u>100.8</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

HEADLINE DEFORMATION

Recorded By: [Signature] Approved By: [Signature] Date: 1/22/03

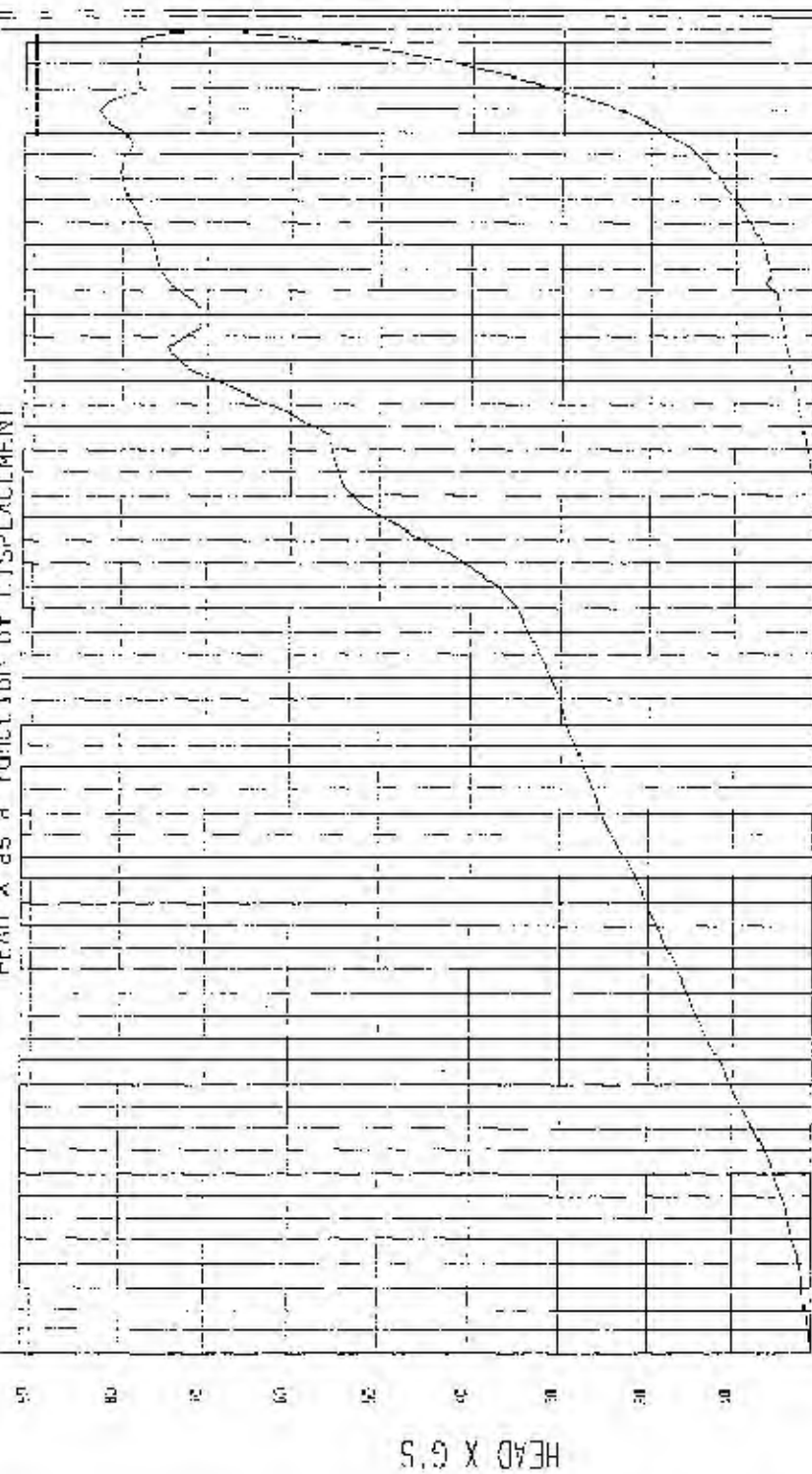
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
input file is \NHTSA\FM3608AV.A05
The HIC = 418.48 calculated over 10.2 msec
T1 = 5.58 msec T2 = 13.74 msec
*****
HIC(d) = 482
Impact Velocity = 23.9 (kph)
```

TEST: 2002 000001 10URANSO SXT FMVSE 20111, 60315-001.4, 1/27/03

COMPONENT: TEST 18 (FM300B), L/S UH1, 11/V= 270/33

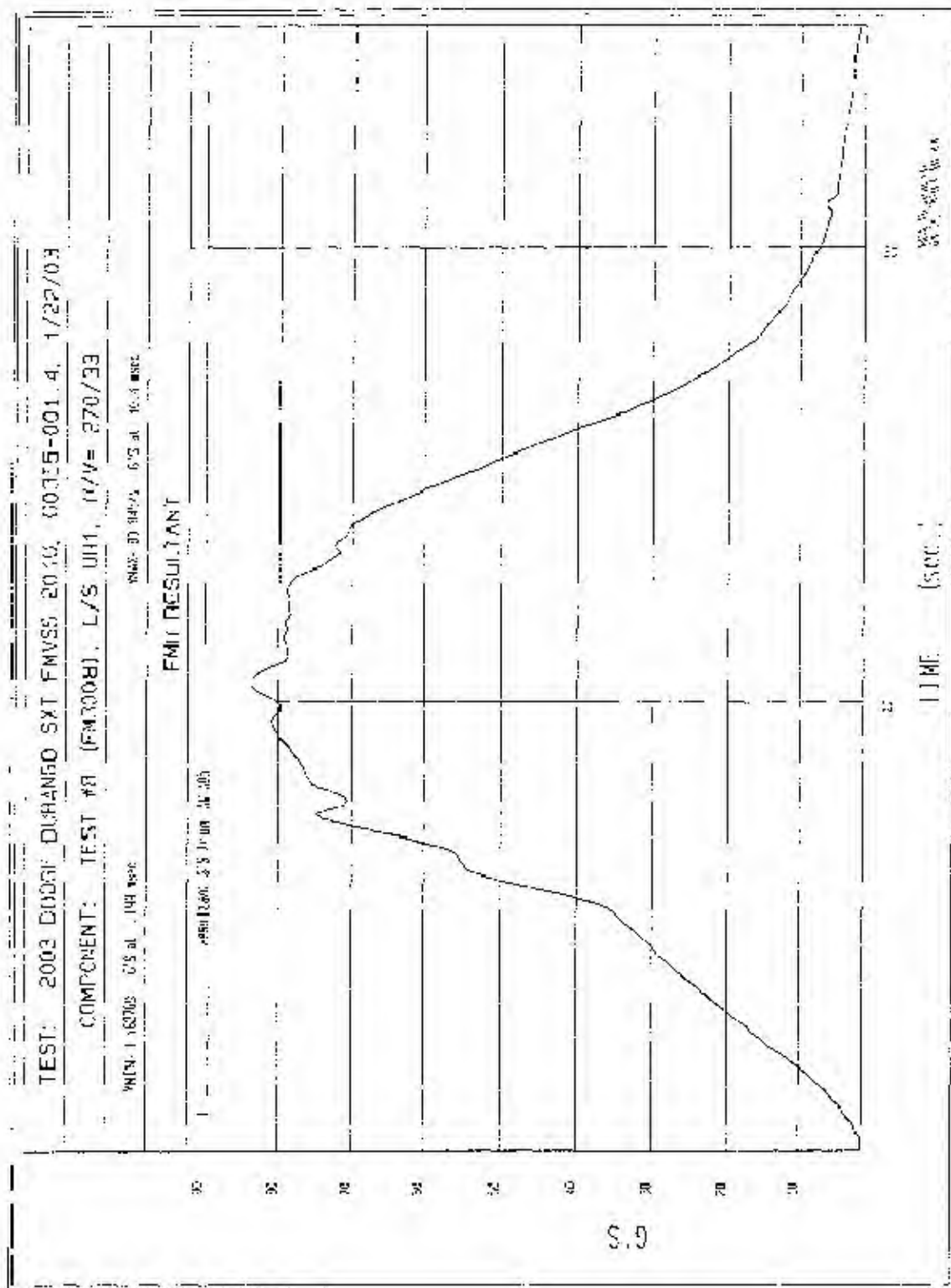
HEAD X as a function of DISPLACEMENT



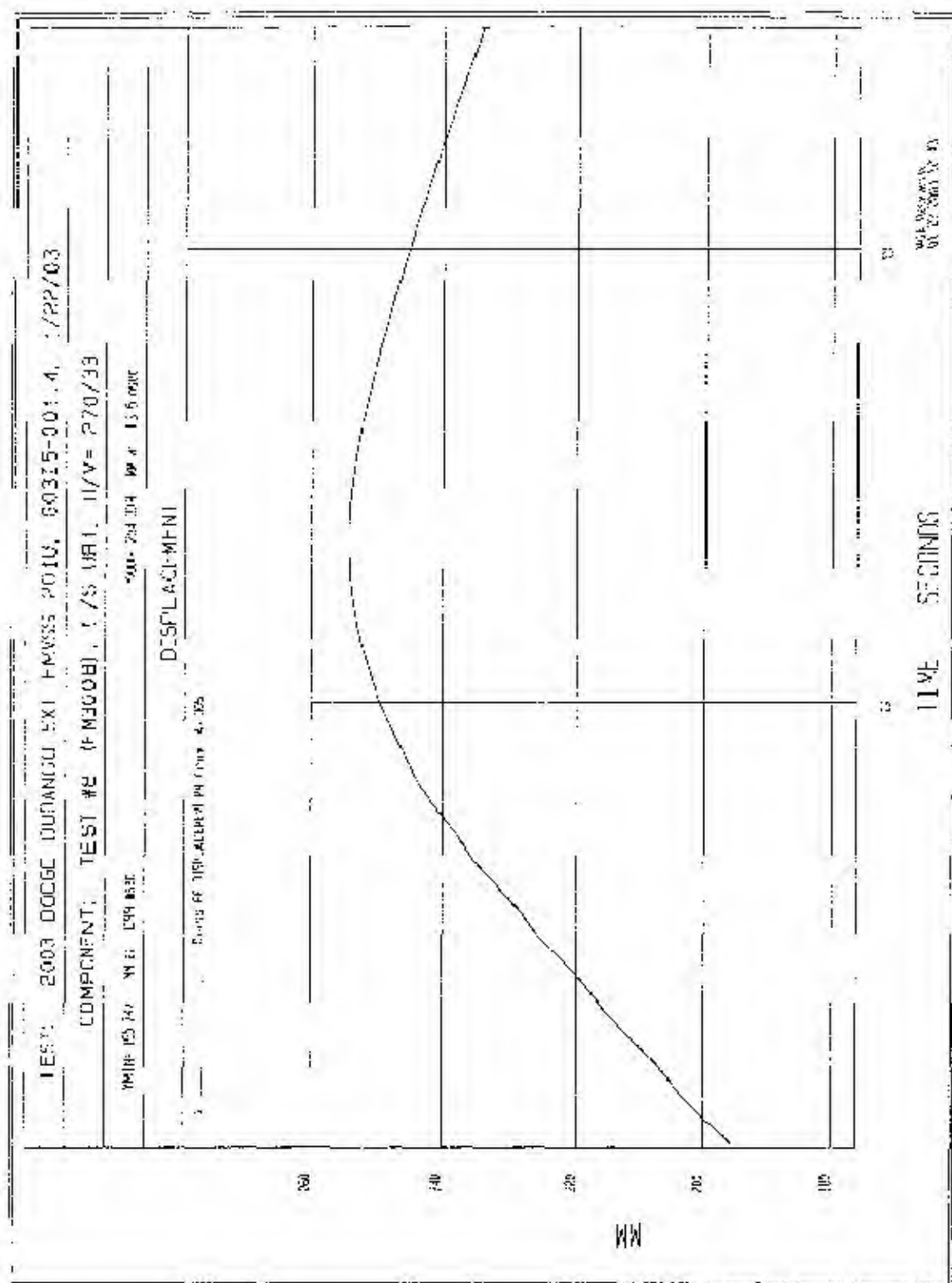
DISPLACEMENT MM

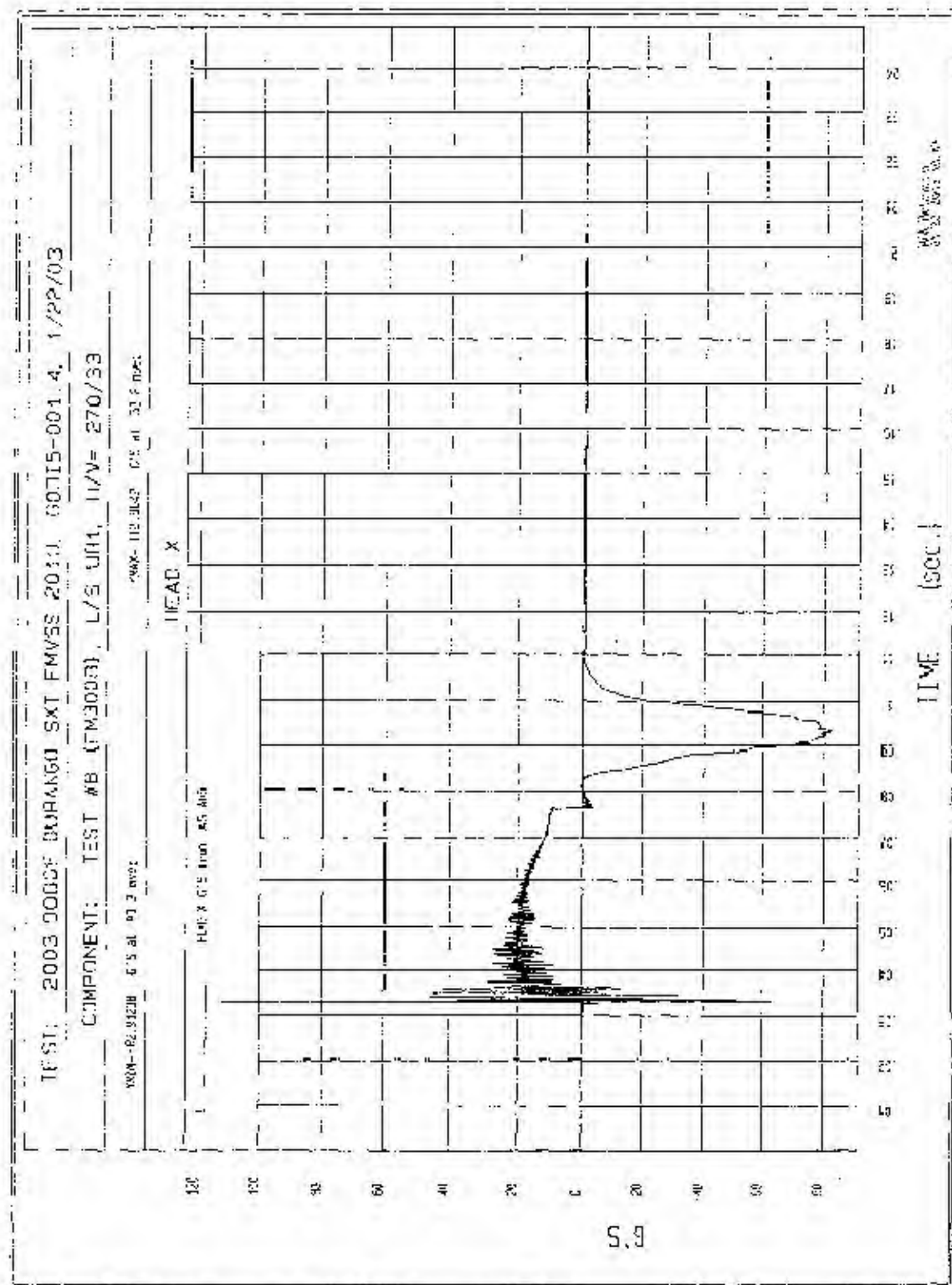
100.000000  
0.000000

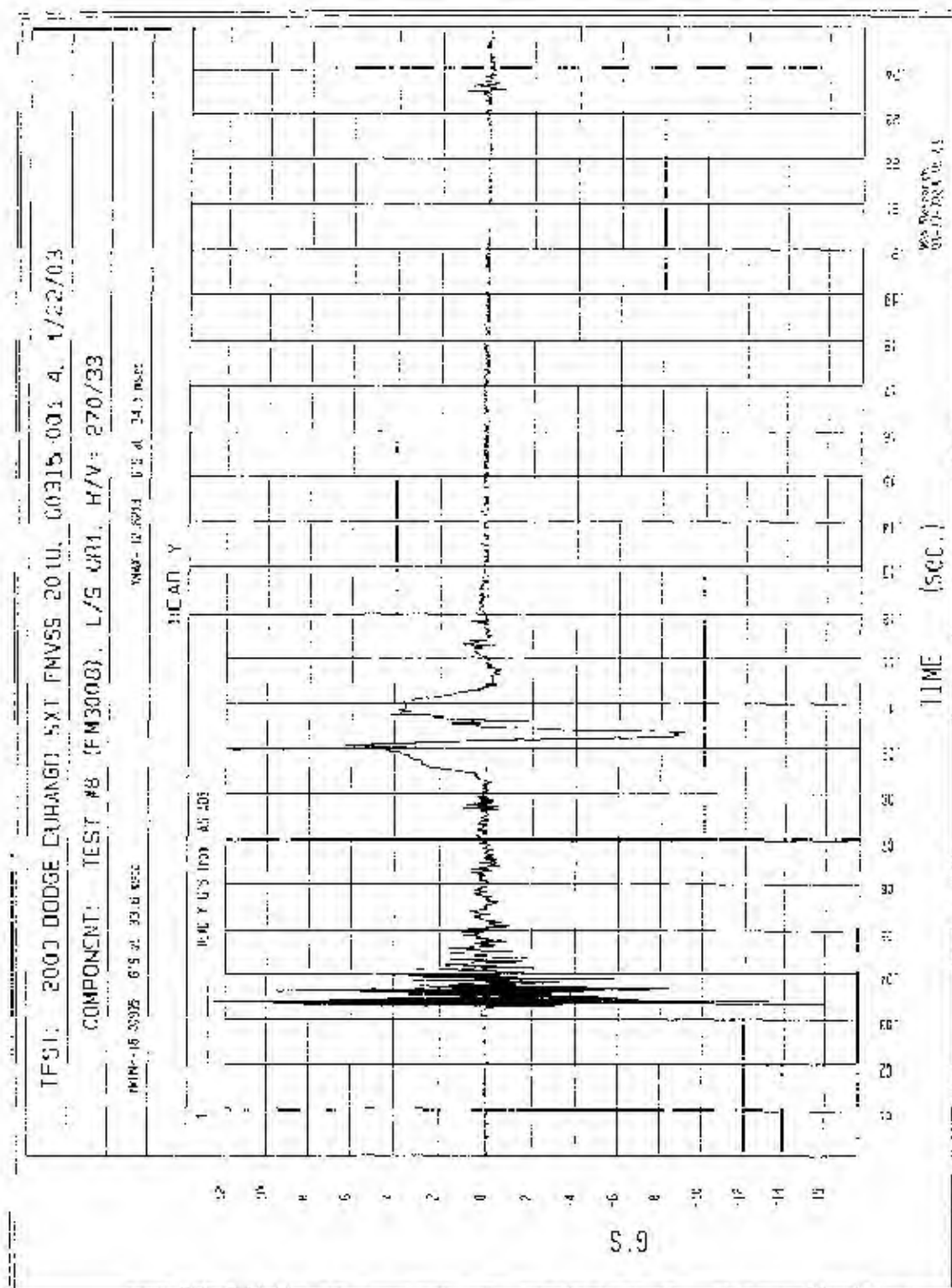




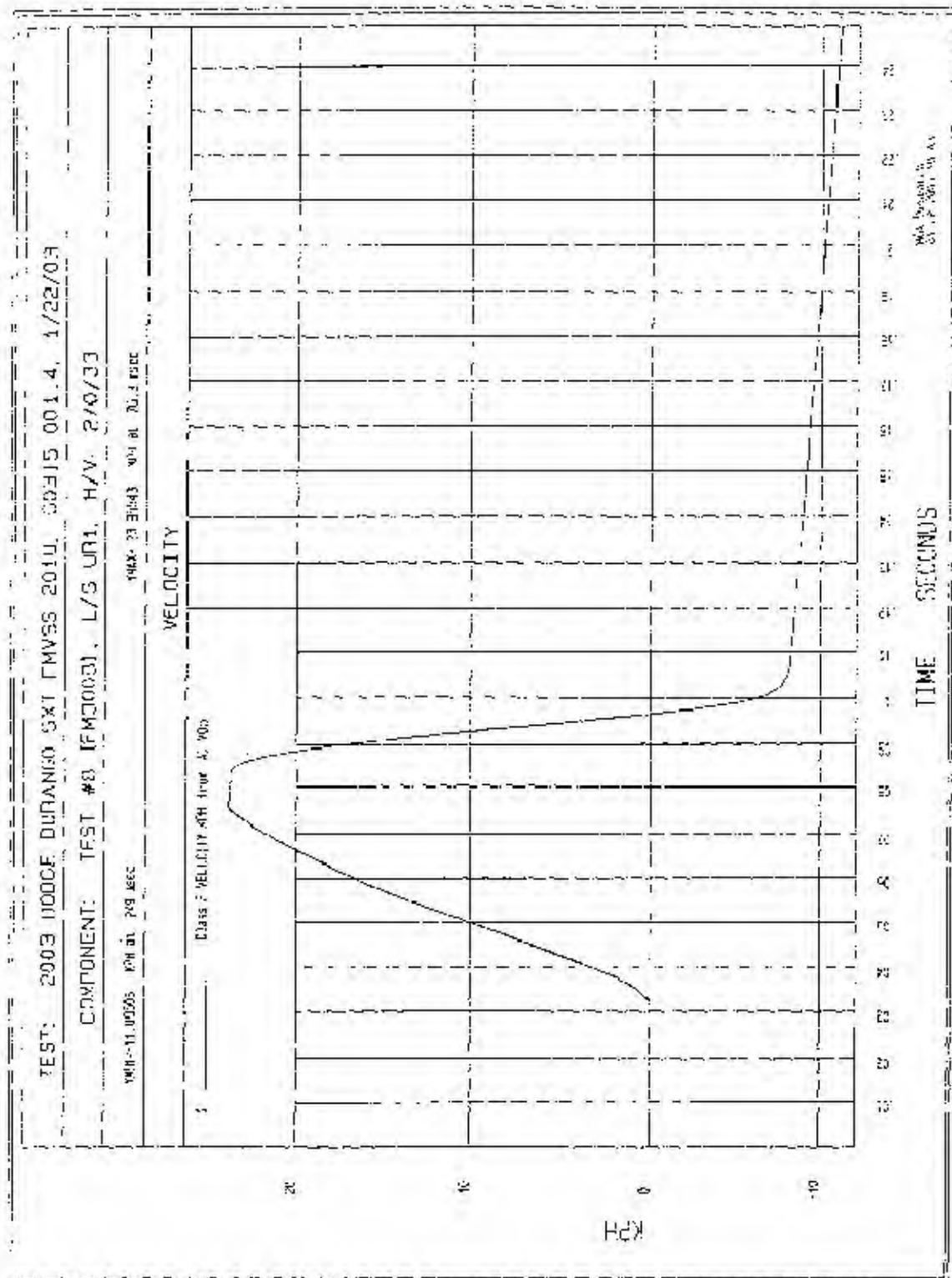












MCA RESEARCH CORP  
FMVSS 2010 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305	1/22/03
TEST #10	LEFT UR2
(FM3010)	ILV = 270/43



MGA RESEARCH CORP  
FMVSS 201U TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305                      1/22/03  
TEST #10                LEFT UR2  
(FM3010)                H/V = 270/43

POST-TEST

MGA RESEARCH CORP  
FMVSS 2010 TESTING  
2003 DODGE DURANGO  
SXT 4-DOOR SUV

C30305 1/22/03  
TEST #10 LEFT UR2  
(FMV3010) H/V = 270/43

POST-TEST

MICHIGAN OPERATIONS  
DATE: 10/18/01  
SUPERCEDES: MGA1P201U\_FRAME #23

DOC. NO.: MGA1P201U\_FRAME #2  
REVISION NO.: 4  
PAGE 9 of 9

### SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO. C30305 VEHICLE YR/MAKE/MODEL: 2003 OLIVE DODGE

#### GENERAL TEST PARAMETERS:

Test Number: 10

Target (Vehicle Side): Left Light 202

Temperature: 22 °F 0

MGA Test Reference No.: FM30710

Humidity: 22 %

Approach Angles: Horizontal 270 °

Time of Test: 12:46 am 01

Vertical 43 °

FMH Serial No: 35

#### TEST RESULTS:

HIC(d)	FIC	$\Delta t$ (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	<u>Left</u> Right Pt. O
<u>826</u>	<u>875</u>	<u>36</u>	<u>23.7</u>	<u>30</u>	<u>4</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	$\Delta V$ Pre-Test	$\Delta V$ Post-Test
<u>X</u>	<u>5</u>	<u>J35424</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35419</u>	<u>95.3</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35061</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VEHICLE DAMAGE

Recorded By: [Signature] Approved By\*: [Signature] Date: 10/21/03

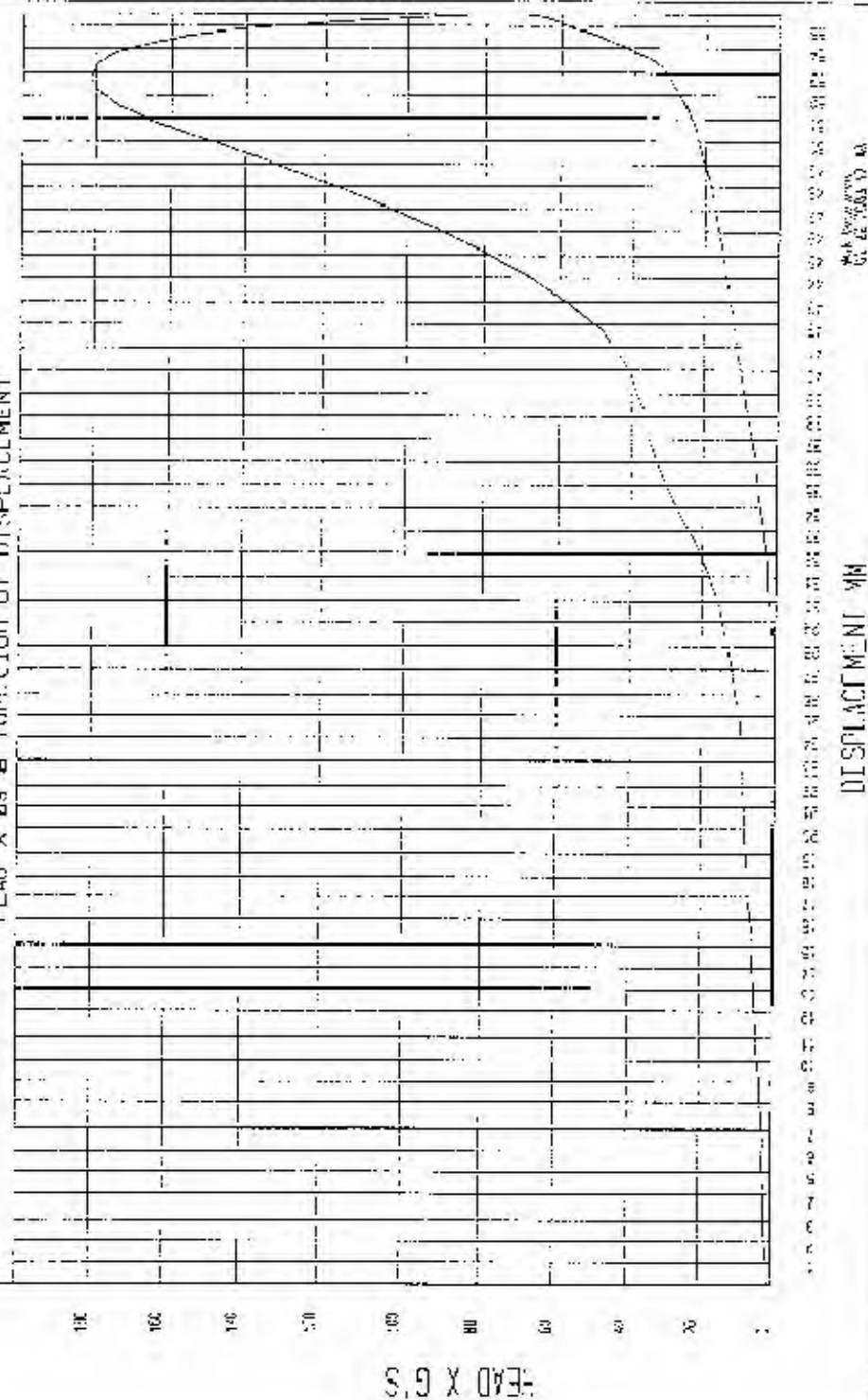
\*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHISA\FM3010AV.ACS
    HIC = 874.50 calculated over 3.6 msec
T1 = 7.27 msec T2 = 10.86 msec
*****
HIC(d) = 826
Impact Velocity = 23.7 (kph)
```

TEST: 2003 0006E OLDFANCO EXT FMVSS 2010, G0315-001 4, 1/22/03

COMPONENT: TEST #10 (FM3010), L/S UR2, H/V- 270/43

HEAD X as a function of DISPLACEMENT





TEST: 2003 JUDGE DURANGO SXT FMVSS 2010, 60315-001.4, 1/22/03

COMPONENT: TEST #10 (FM3010), L/S UR2, H/V= P/O/43

MIN= 470534 5'S at 24.9 sec

MAX= 135.2161 6'S at 9.05 msec

FMH RESULTANT

1 600.0000 5'S from 21.05

250

180

160

140

120

100

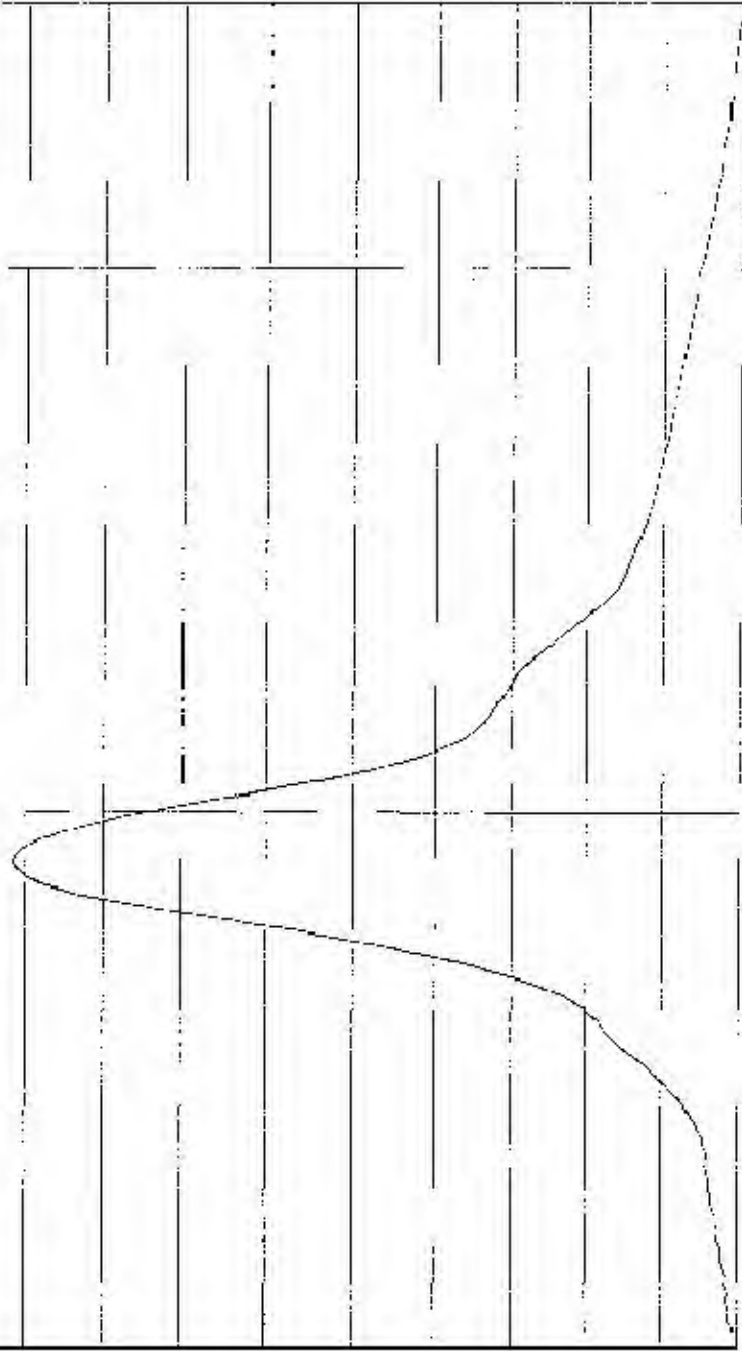
80

60

40

20

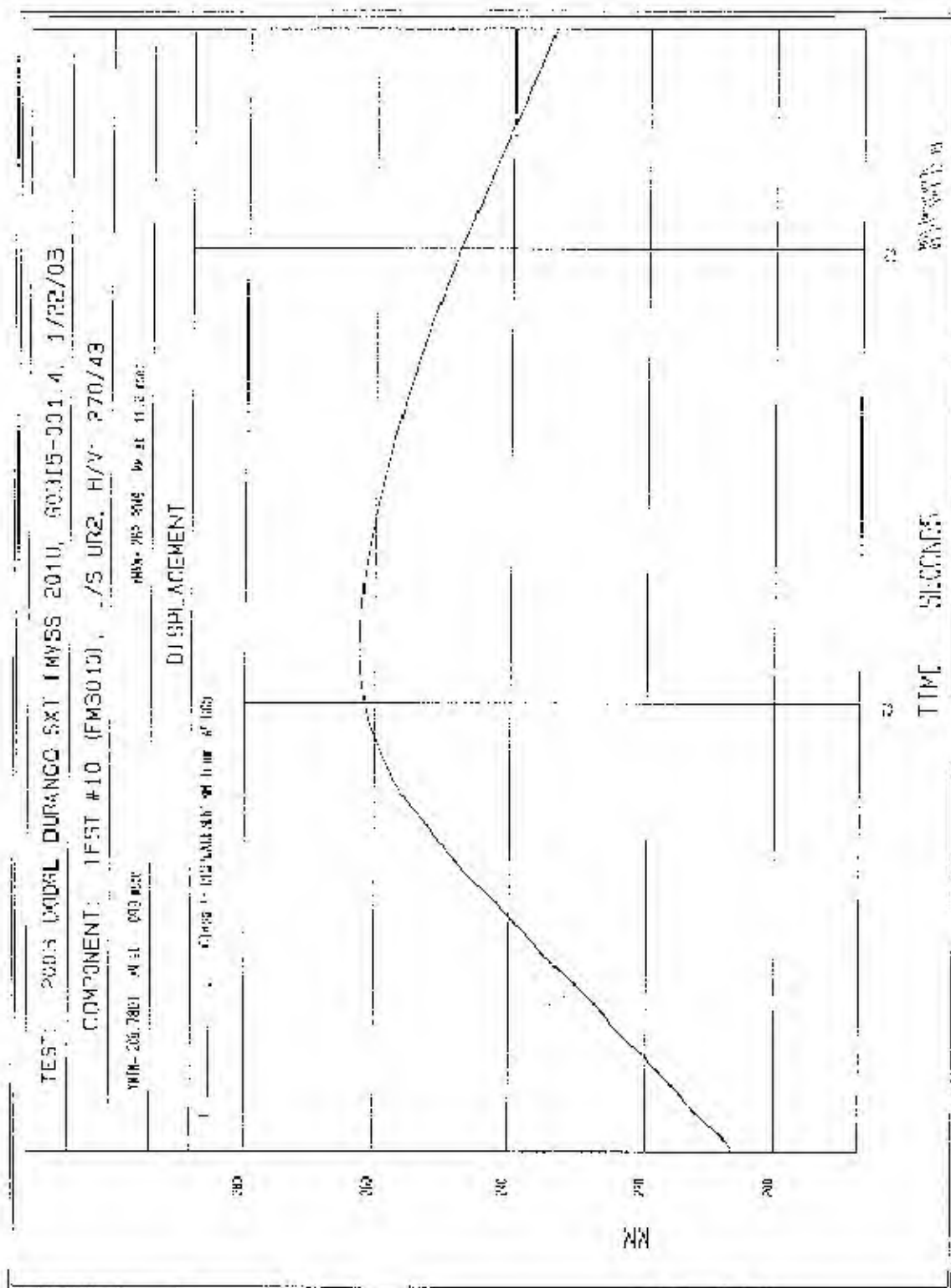
5'S

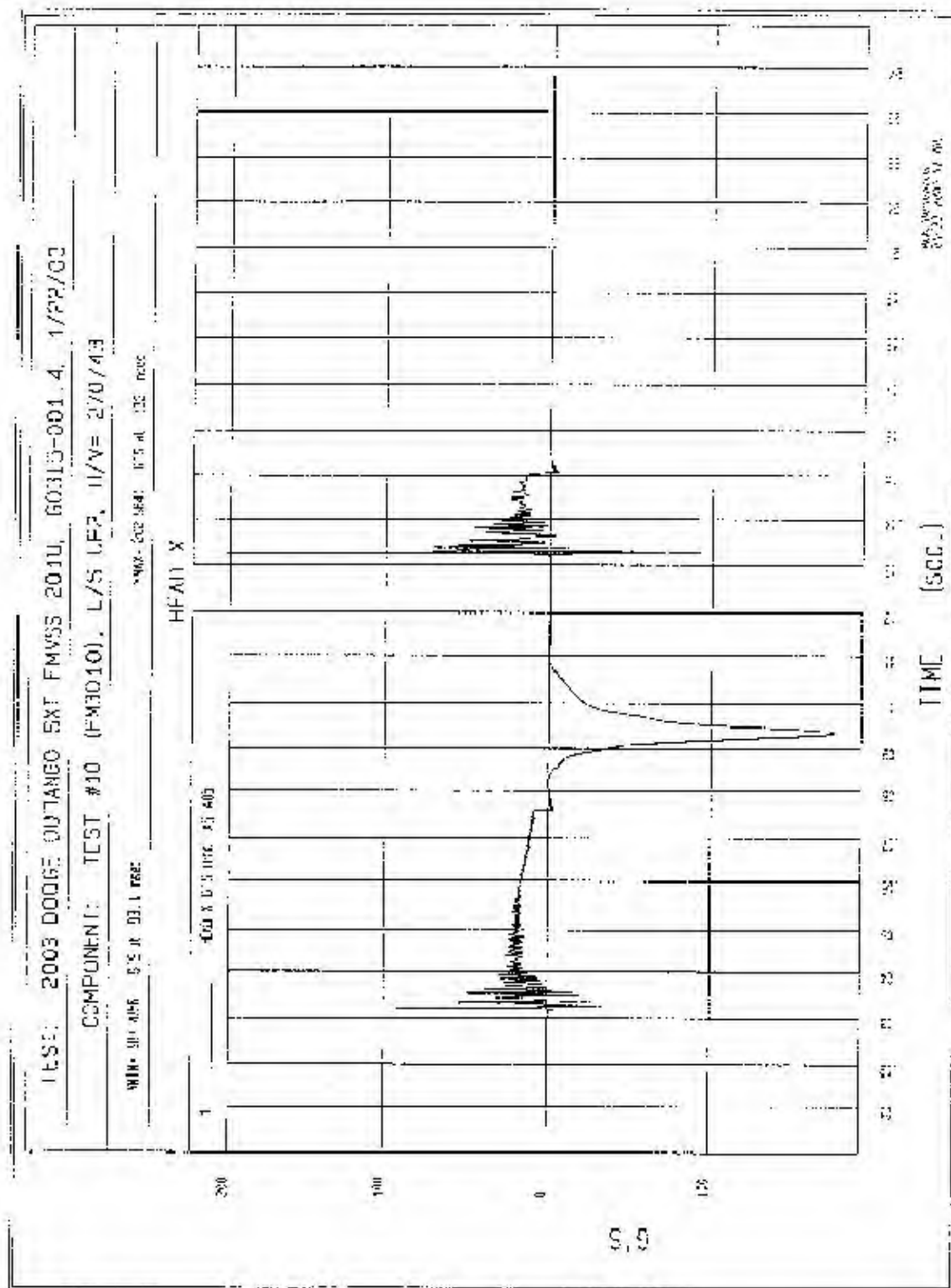


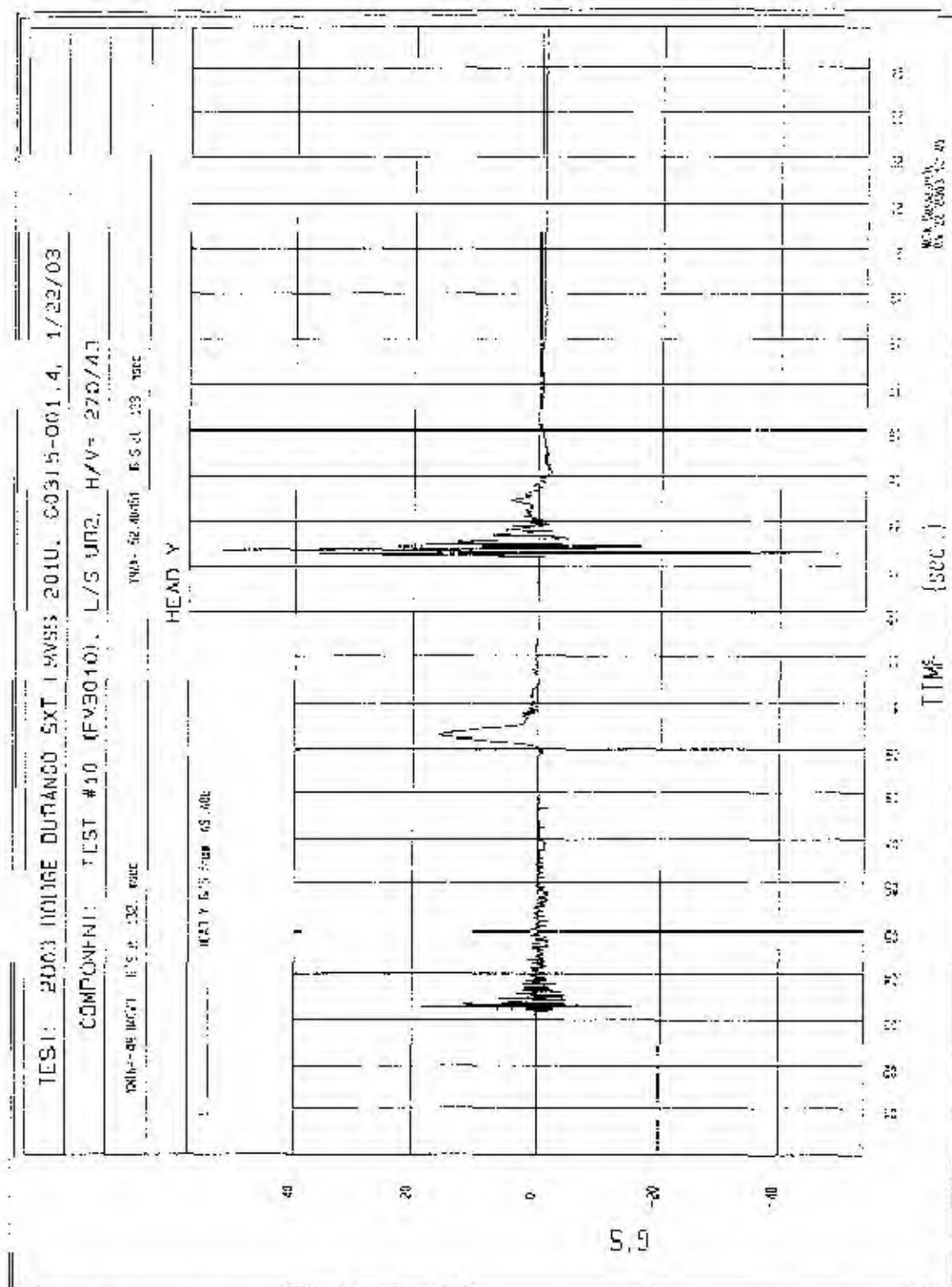
TIME (sec.)

MAX Resultant  
07-22-2003 12:43

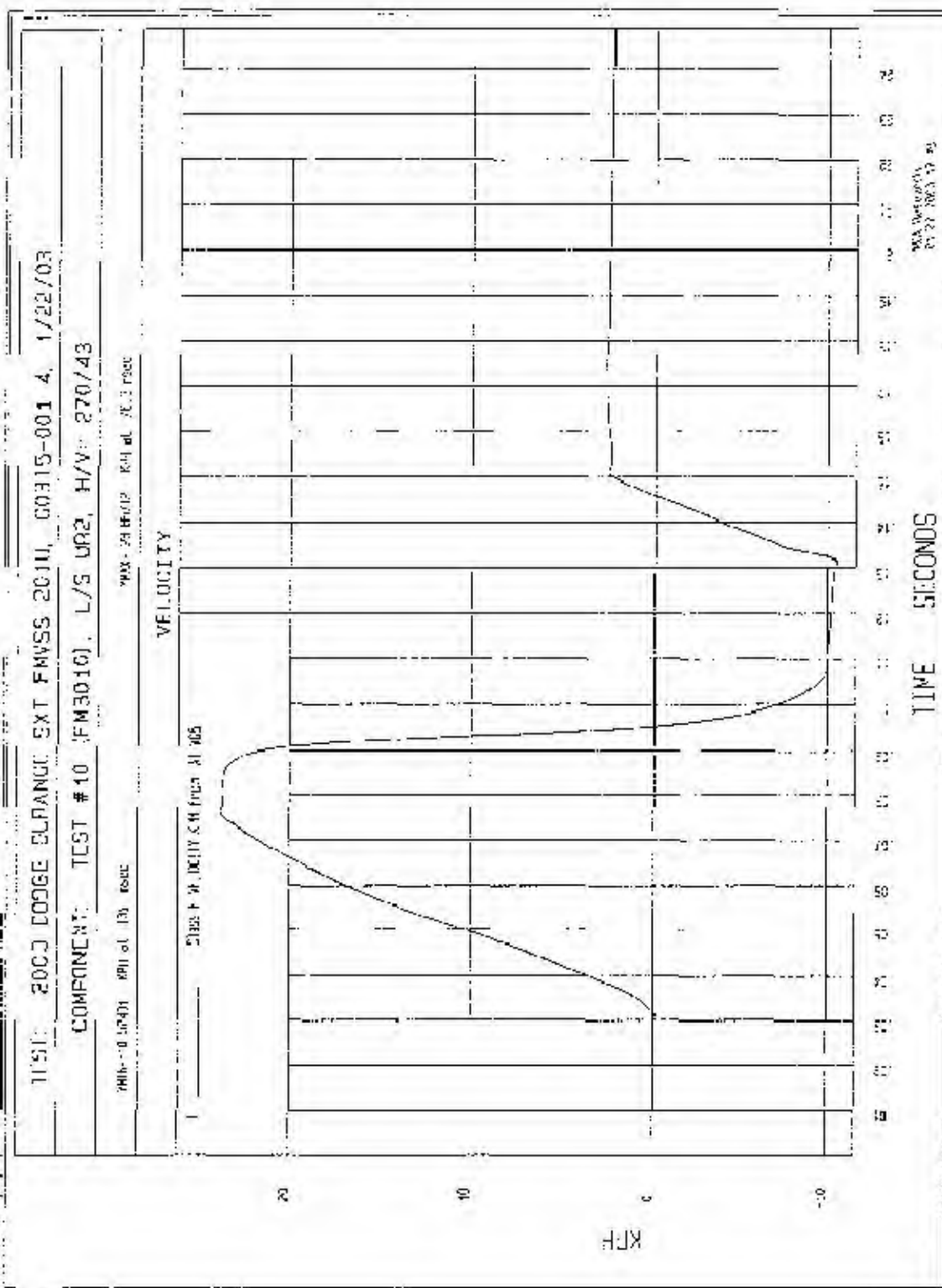












#### 4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

The following section lists the test equipment for the compliance test series. Items marked with an asterisk are calibrated by an external lab. An additional summary table is given for the pre and post-test calibration data for the Free Motion Headforms. The temperature trace to confirm testing was conducted between 66°F and 78°F (19°C - 26°C) is included in Appendix A.

TABLE 4-1 LIST OF ITEMS USED

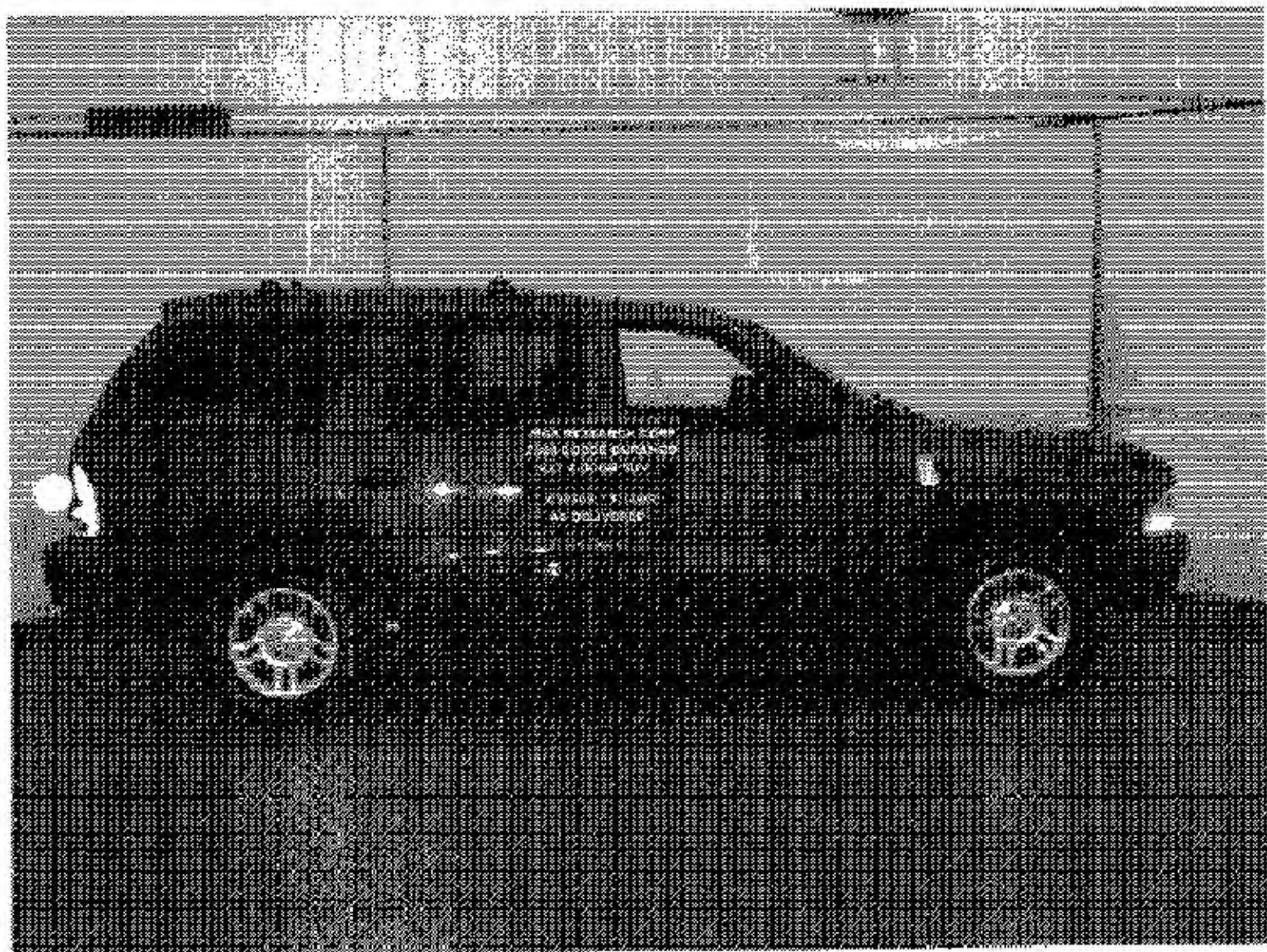
ITEM	MANUFACTURER NAME	MODEL #	FUNCTION OF ITEM	ACCURACY	CAL. INTERNAL
Head Drop Tower (includes test frame and DAS)	MGA Research Corp.	MGA-100-DC	FMH Calibration	N/A	N/A
Accelerometers	Endevco	7264-2000	Acceleration Data	±0.5%	6 months
*Digital Inclinometer	Macklanburg-Duncan	PRO 360	Set Angle of FMH/Targeting	0.1°	Annual
FMVSS 201U Test Frame (includes the propulsion control system, actuator, test frame, and DAS)	MGA Research Corp.	MGA-100-FMH	Test System	N/A	N/A
Free Motion Headforms	UTAMA UTAMA UTAMA	035 036 038	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Kodak	RO1000	Record Event	N/A	N/A
*FARO*	Faro Technologies	S08059801273	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Protractor	Stanley N/A Craftsman	33-215 -- --	Measurement Targeting FMH setup Horizontal Measurement	1 mm N/A 0.5°	Annual
*Vehicle Scale 9804-022/9805-175	Cardinal	8950F	Weighing Vehicle	± .5 kg	Annual
* Scale	Detecto	AP-20	Weigh FMH Head	± 0.01 lb	Annual
*Temperature Recorder	Dickson	TL120	Record Temperature and Humidity	± .5°C ± 1% RH	Annual



**TABLE 4-2 FMH CALIBRATION SUMMARY DATA SUMMARY TABLE**

FMH Serial #		Weight (lbs)	Temp (°C)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#35	10.02	21.0	28.0	241.7	4.3	Yes
Post	#35	10.02	22.0	22.0	243.1	10.7	Yes
Pre	#36	10.03	21.0	28.0	255.6	8.6	Yes
Post	#36	10.03	22.0	22.0	253.5	3.3	Yes
Pre	#38	9.99	21.0	28.0	257.1	6.9	Yes
Post	#38	9.99	22.0	22.0	255.5	5.0	Yes

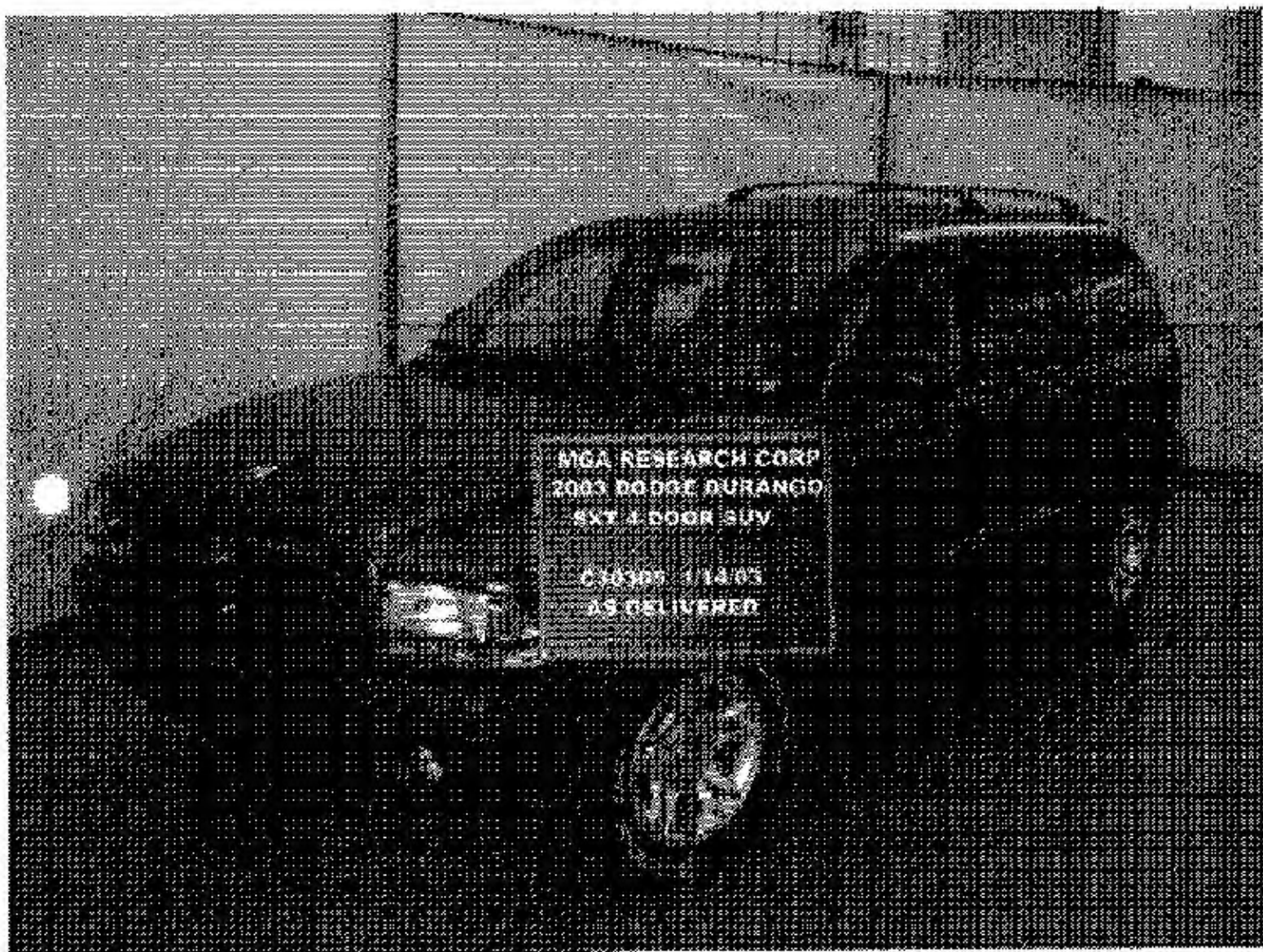
Calibration certificates and headform calibration information can be found in the P572L Performance Calibration report which accompanies this report.







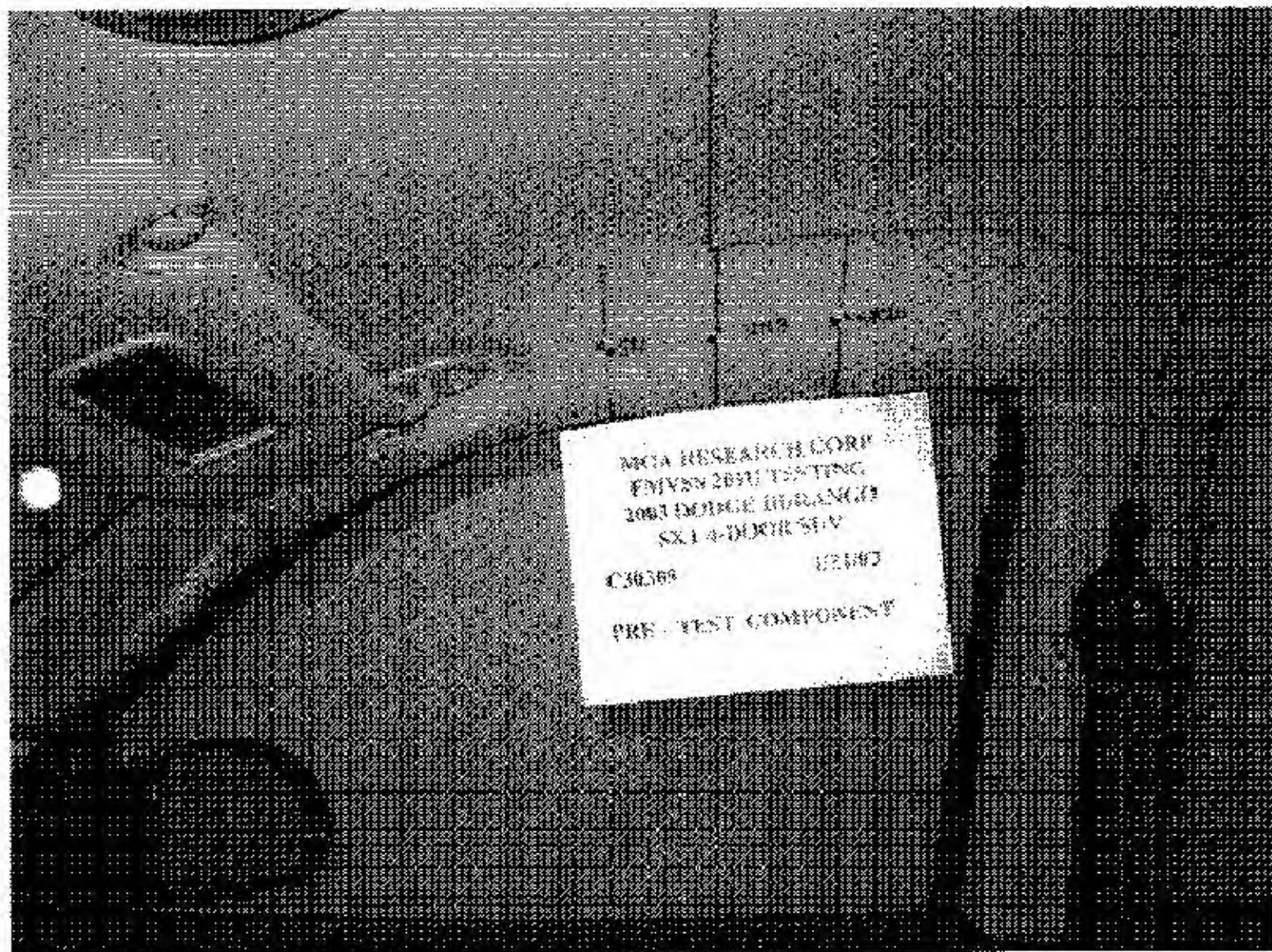


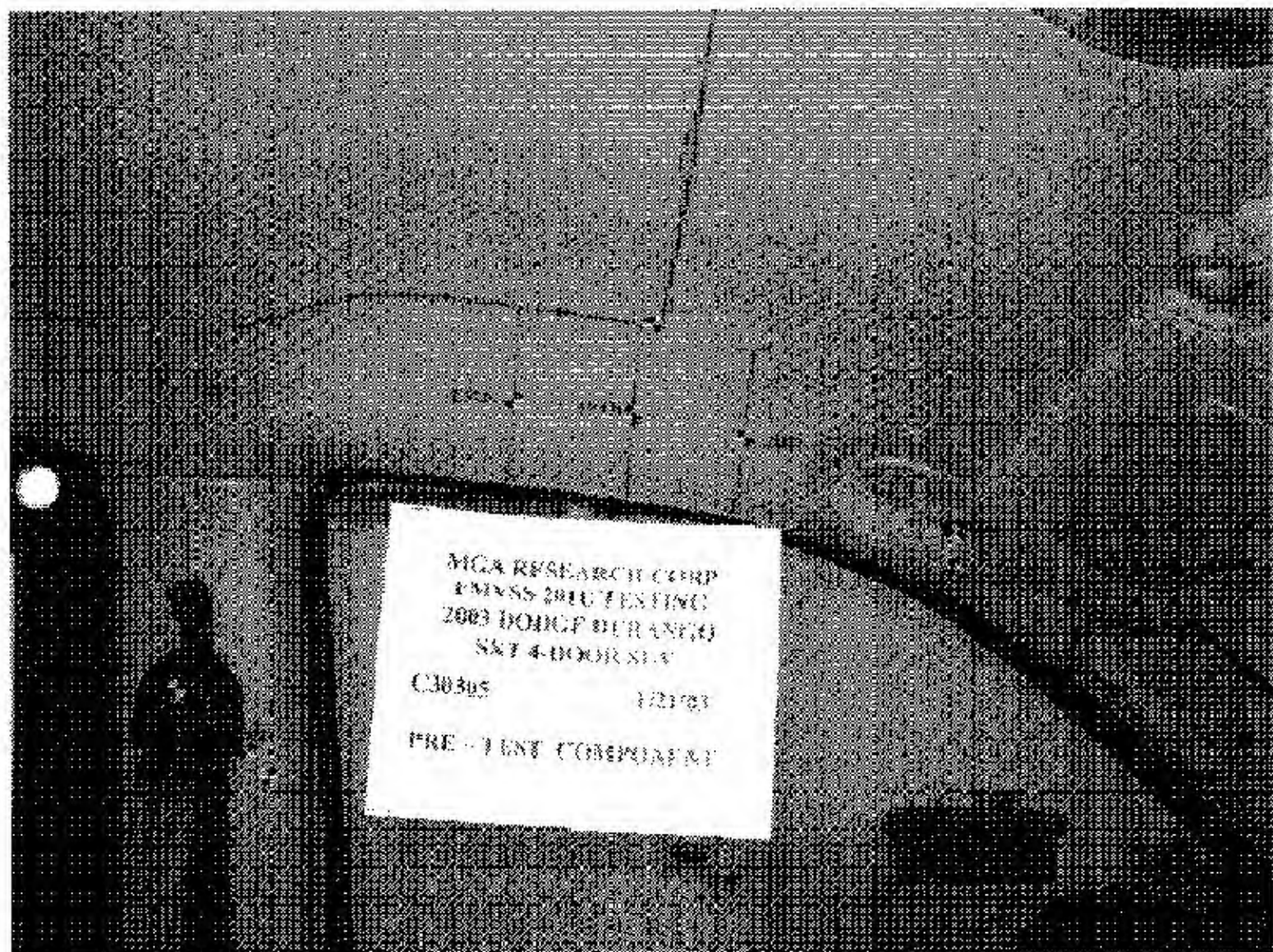












MGA RESEARCH CORP  
FMVSS 2010 TESTING  
2003 DODGE DURANGO  
SUV 4-DOOR SUV

C30305 1/21/03

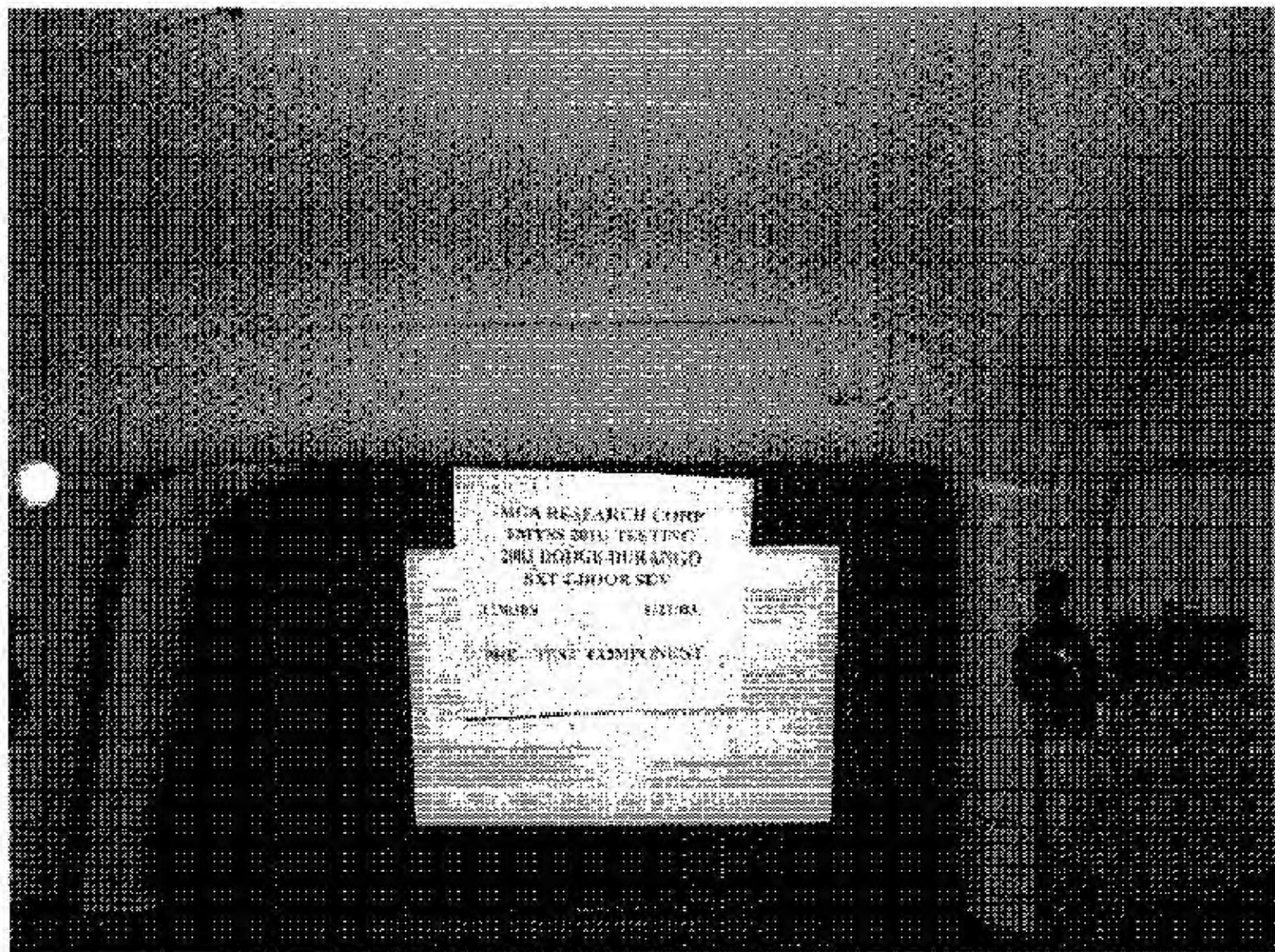
PRE-TENT COMPONENT



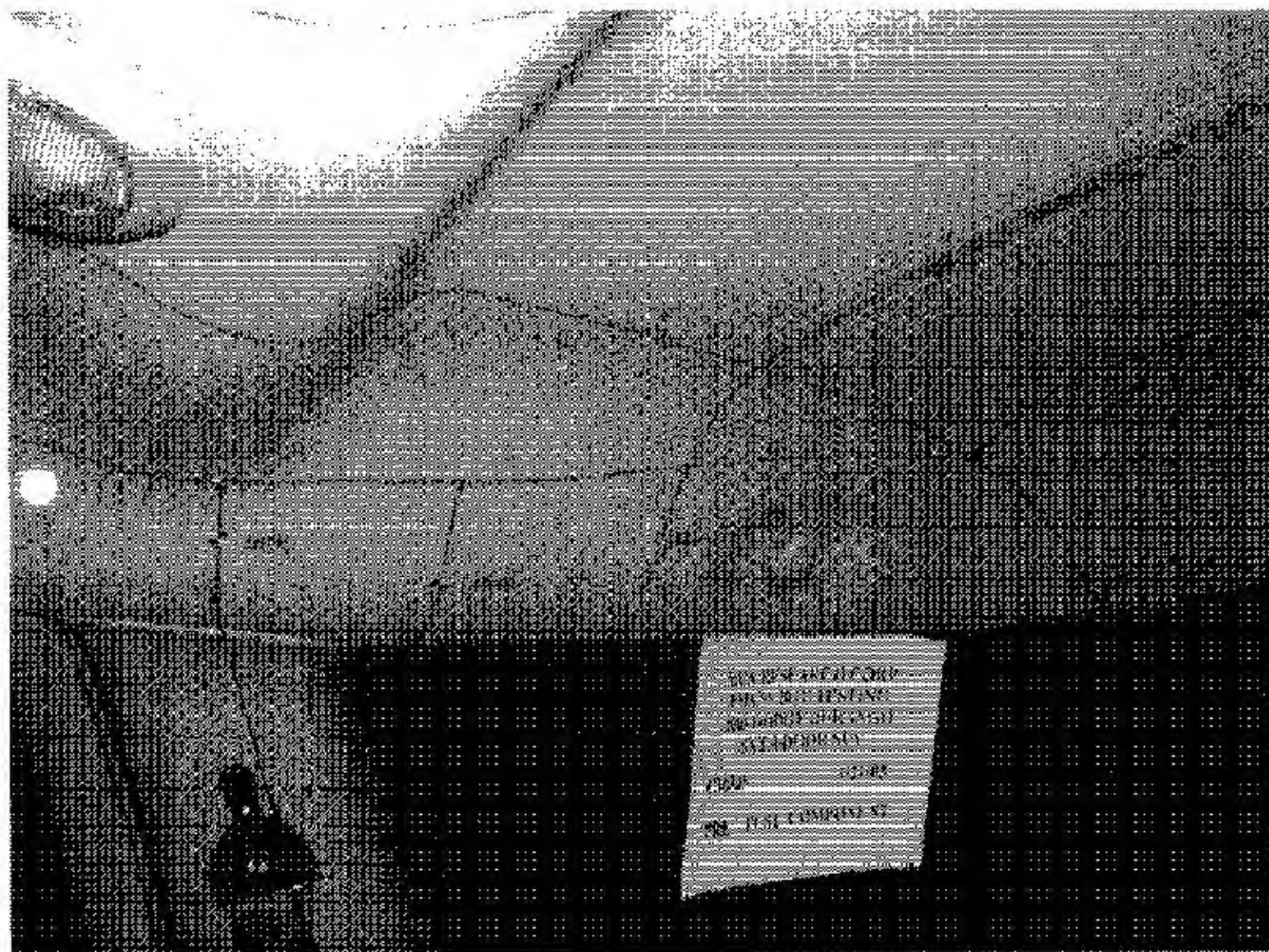
MILITARY AIRCRAFT CORP  
EMV-8001 TESTING  
BRIEFING BOARD DE RANGE  
SNT 400000000

C20005 1/2100

PRE - TEST COMPONENT













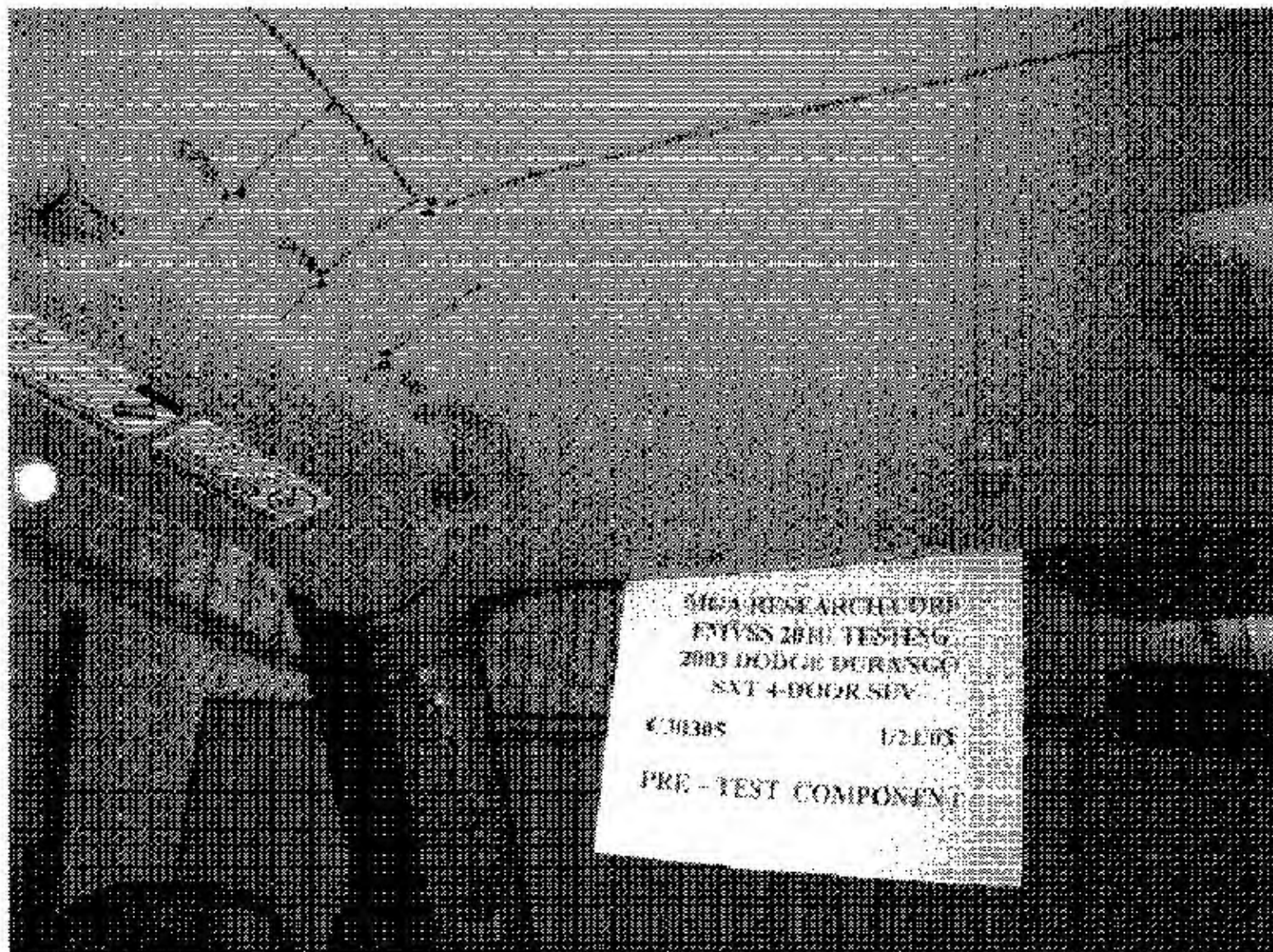
WCA RESEARCH CENTER  
EMISS 2010 TESTING  
200 DODGE DURANGO  
SNT 10000000

CH001 12/10/11

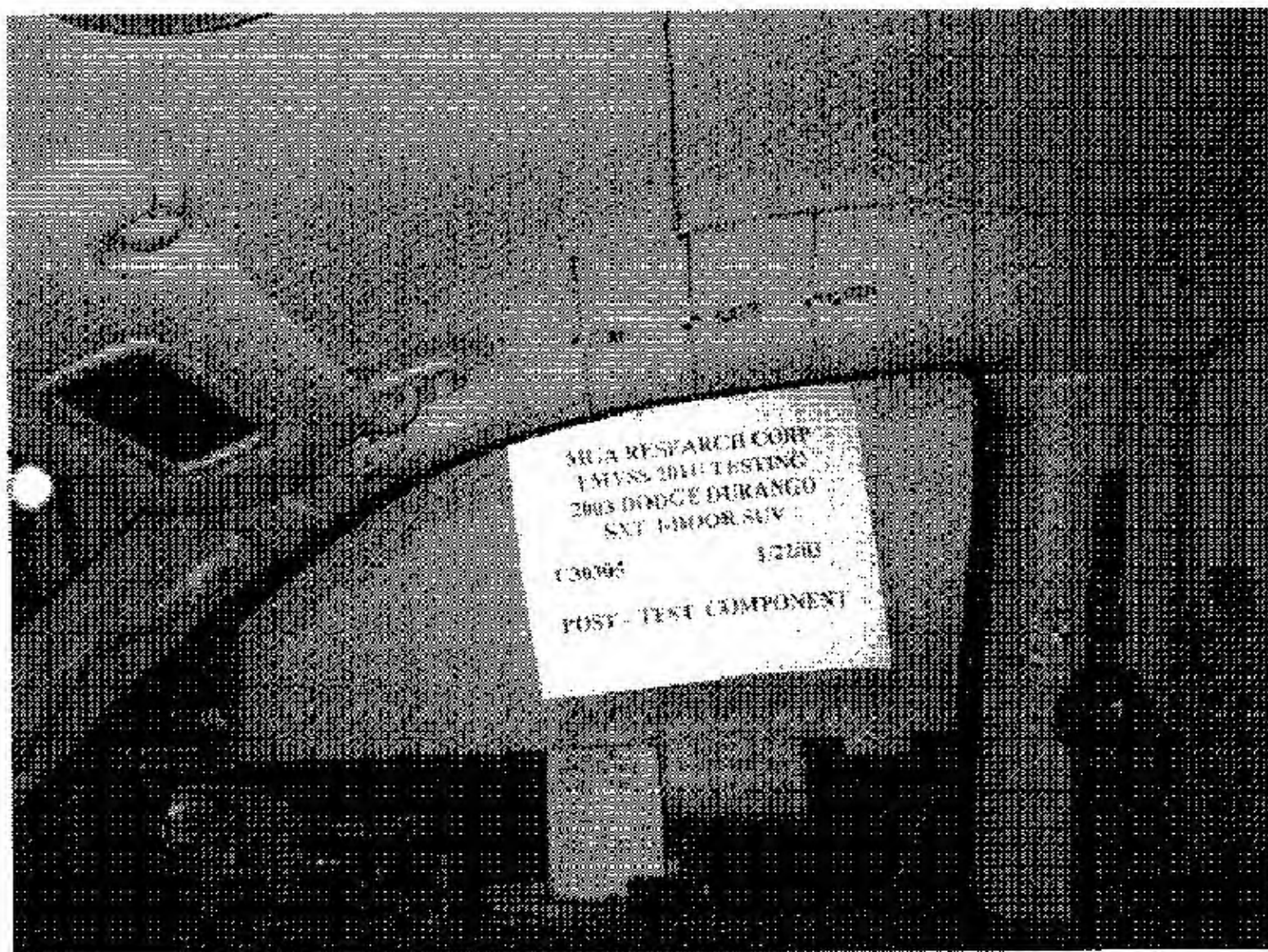
PRE-TEST FURNISHING











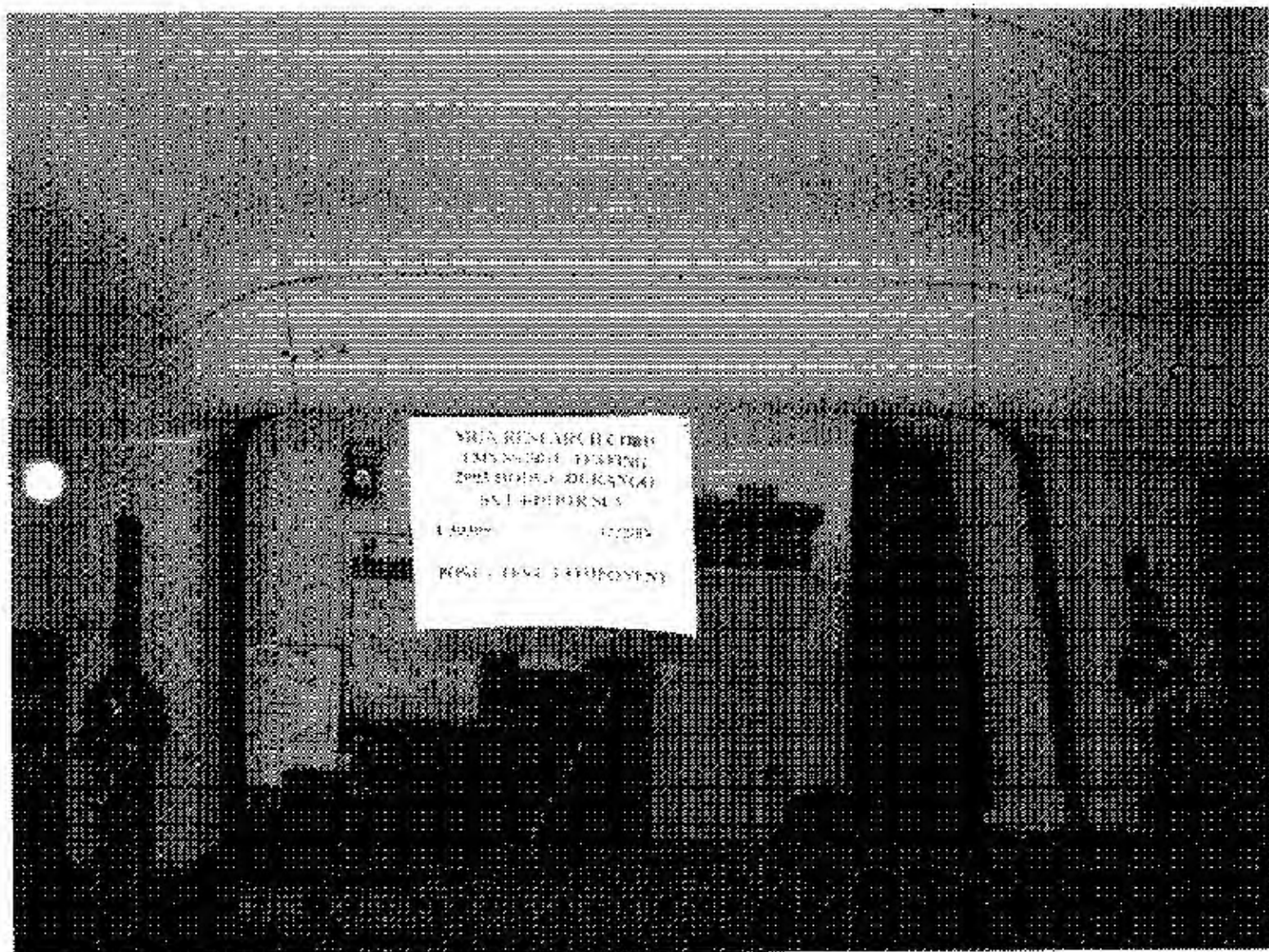


MGA RESEARCH CORP.  
EMVSS 2010 TESTING  
2003 DURACIE DURANGO  
SXL 4-DOOR SUV

C30005

1/22/03

POST-TEST COMPONENT



WPA RENAISSANCE  
1915-1916  
20th ST. & 10th ST.  
S.E. 10th ST.

10th St. 10th St.

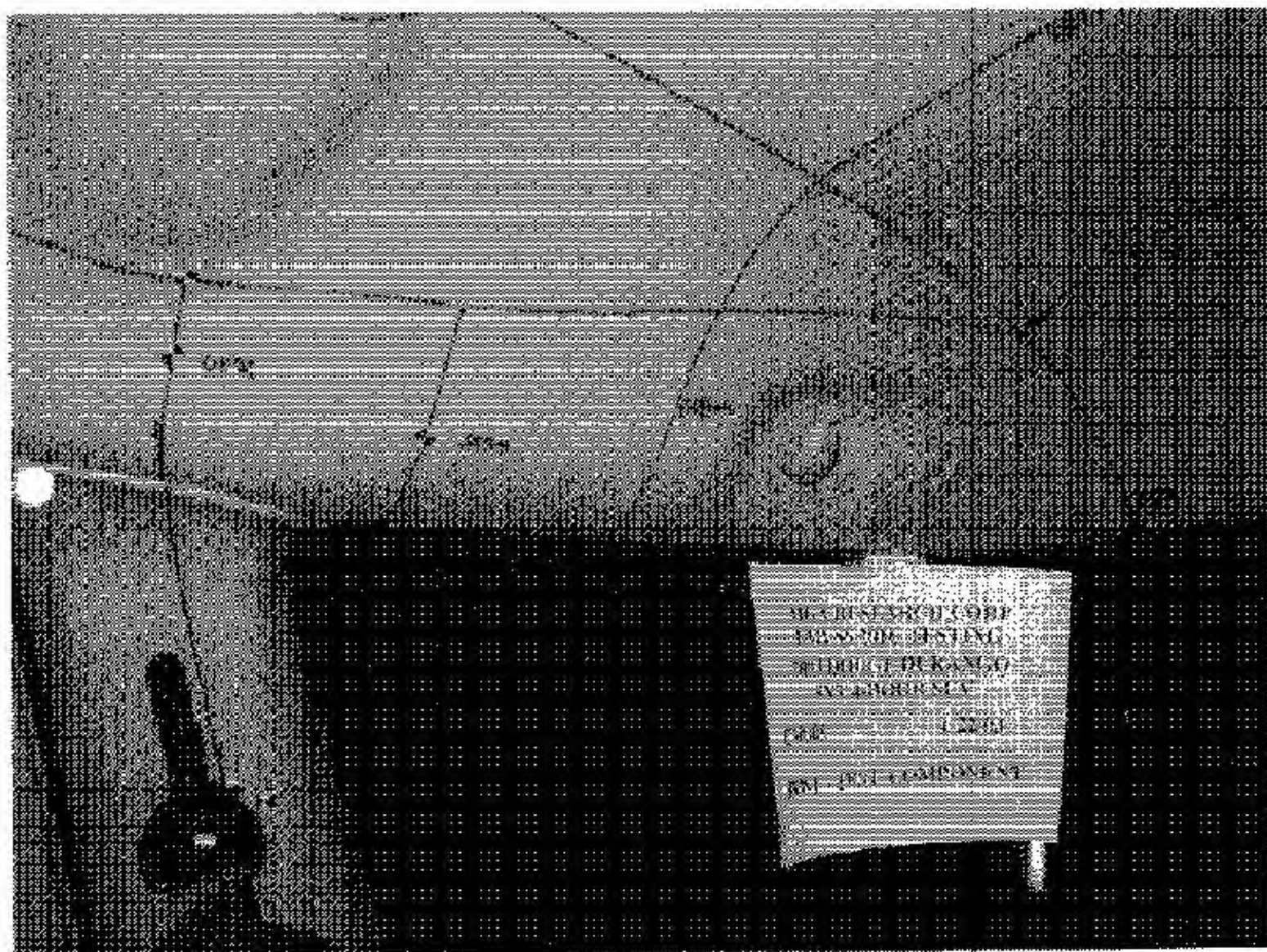
10th St. 10th St.



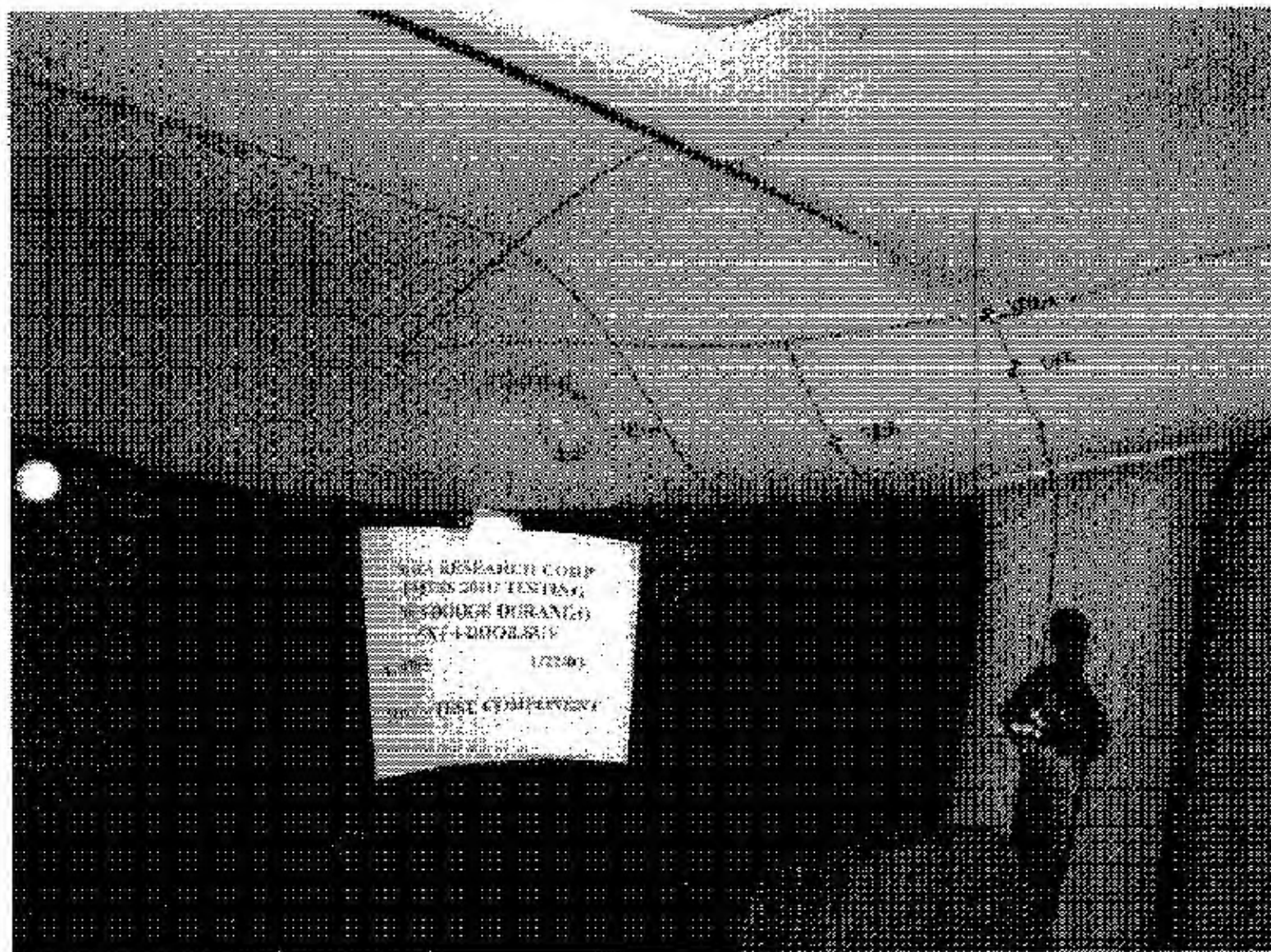
MCN DE NFA RUII DRP  
FMSN 2011 11 11 11 11  
2003 DODGE DAKOTA  
SVT 4-DOOR SUV

U30305 022703

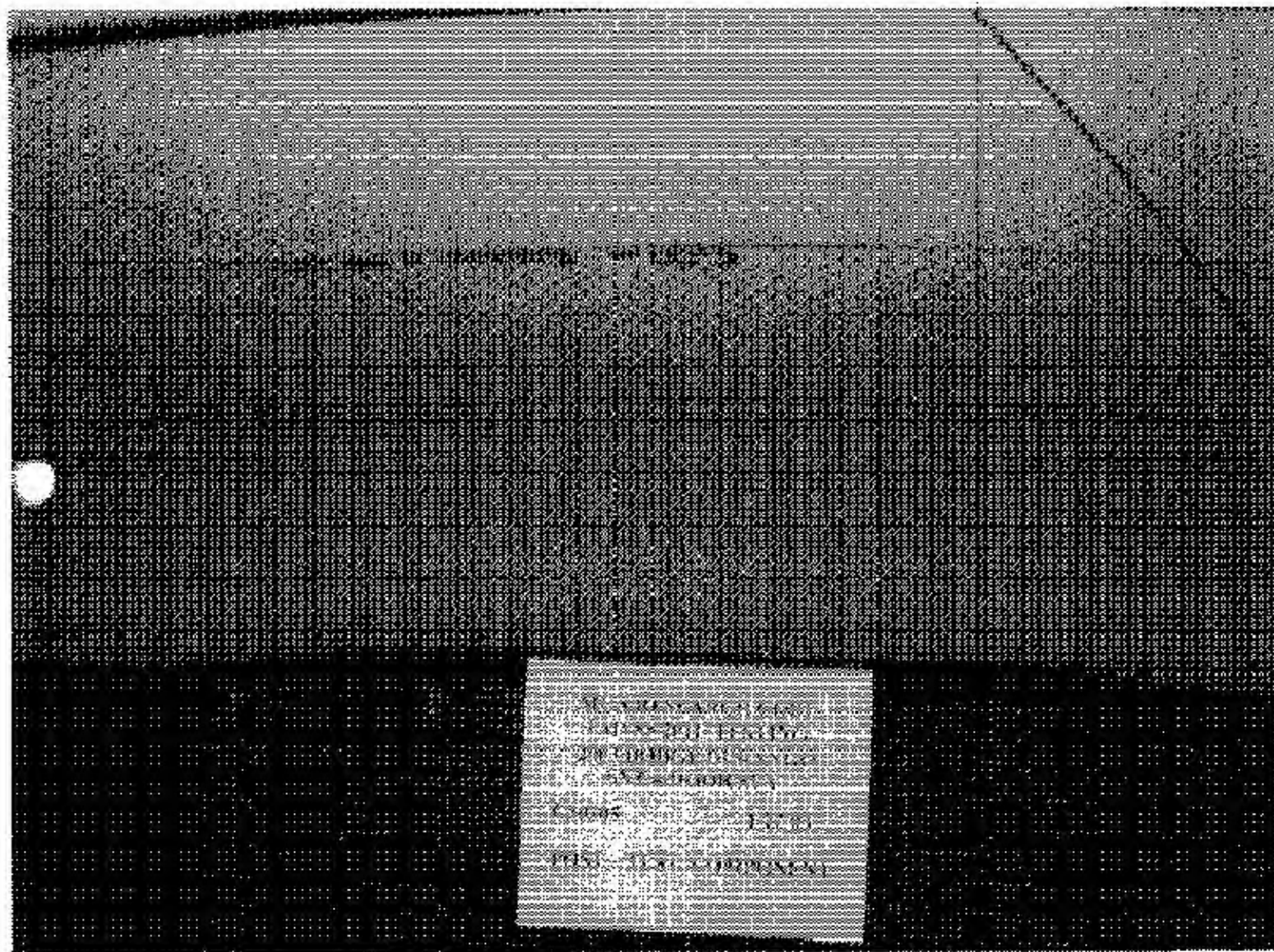
PRINT TEST COMPONENT

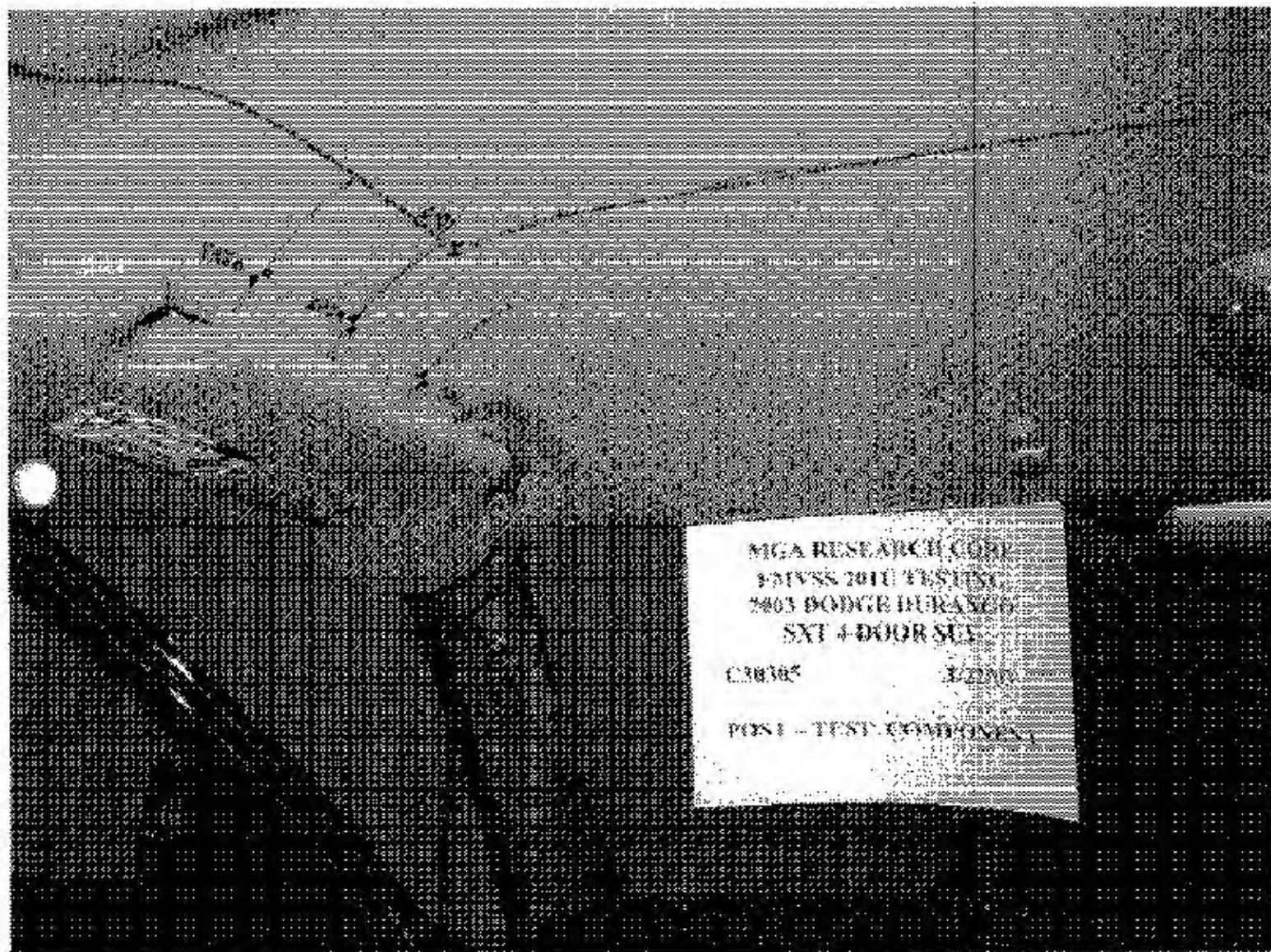




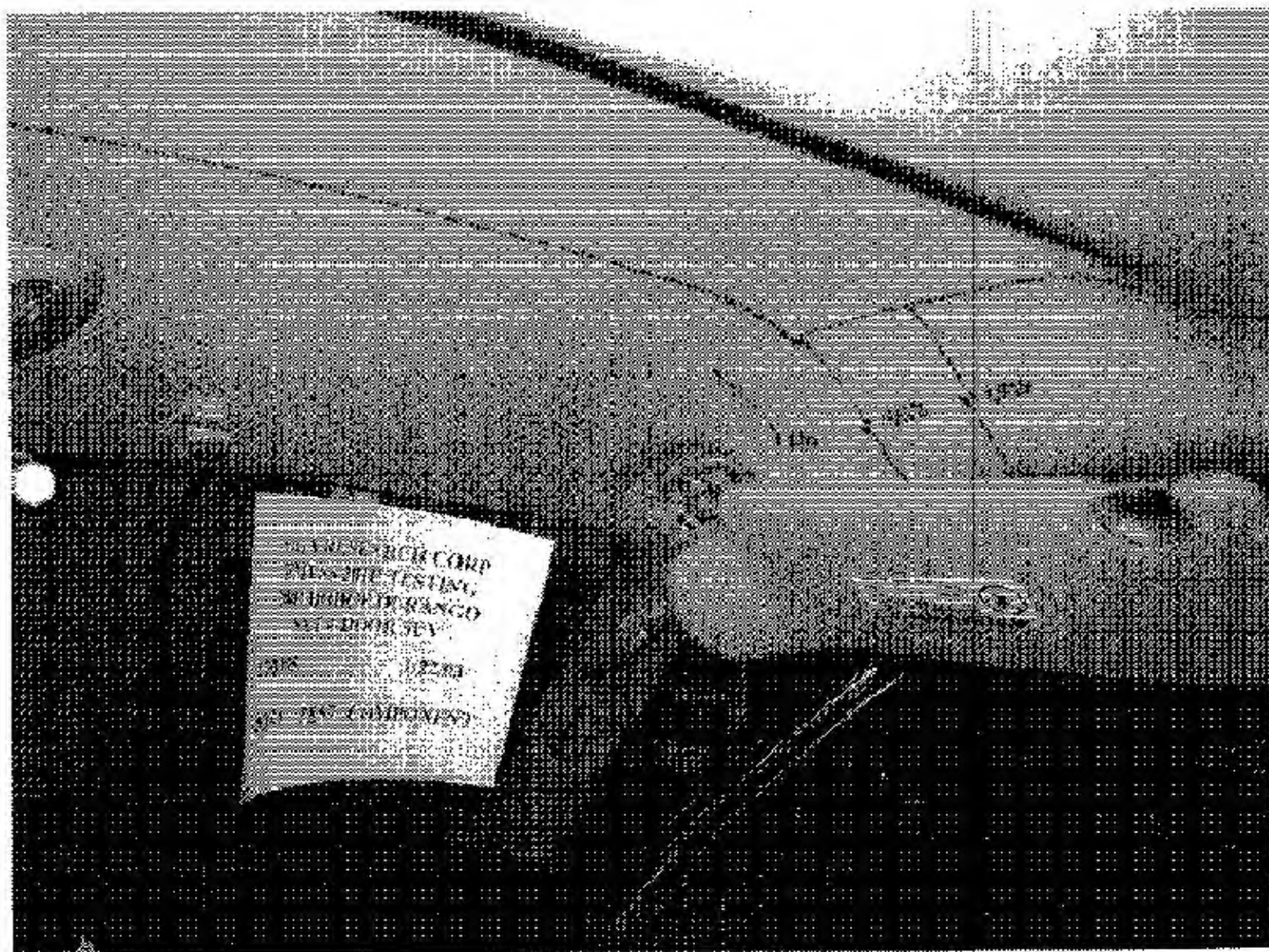












# C30305 Temperature Trace 1/21-22/03

